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THE Journal

OF THE OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXXV • OKLAHOMA CITY, OKLAHOMA, MAY, 1942 • NUMBER 5

★ *Published Monthly at Oklahoma City, Oklahoma, Under Direction of the Council*

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THE Journal

OF THE OKLAHOMA STATE MEDICAL ASSOCIATION

Issued Monthly at Oklahoma City, Oklahoma, under direction of the Council.

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Vol. XXXV MAY, 1942 Number 5

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Entered as second-class matter, Oklahoma City, Oklahoma, January 30, 1940, under the act of March 3d, 1879.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, 210 Plaza Court, Oklahoma City.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost provided request for them is attached to manuscripts or made in sufficient time before publication.

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VOLUME XXXV OKLAHOMA CITY, OKLAHOMA, MAY, 1942 NUMBER 5

The Physiological Approach to Gynecology*

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NASHVILLE, TENNESSEE

During the last ten years, a foundation has been laid for the application of the physiological concept of disease to the subject of gynecology. In seeking a topic for today's discussion, one useful to the clinician at the bedside, nothing seemed more appropriate than the physiological approach of gynecology. The basis of this physiological approach is a realization of the importance of the various activities of the sexual organs in the normal life of women.

Physiological consideration of any gynecological problem involves an appraisal of the patient's functional needs, of the extent of the functional disturbances, and of the effect of treatment on genital function. The *choice* of treatment is dictated by the type of pathology present, and the functional requirements of the individual.

As examples of this physiological approach, let us consider briefly some phases of the problems of discharge and of menstrual disorders.

In the juvenile form of vulvovaginitis, especially that due to gonorrhea, physiology has provided the answer. The child's thin vaginal mucous membrane becomes excoriated and the subepithelial tissues infected. Administration of estrogen causes a proliferation of the mucous membrane with healing of the infected areas. The proliferated epithelium becomes resistant to the disease.

TeLinde[1] recommends the use of vaginal suppositories and reports 175 cures in as many patients. He inserts an estrogen suppository of 1,000 I.U. nightly, and continues this for two weeks after the first negative smear. Russ and Collins,[2] in 25 cases, used 1 mg. of stilbestrol orally t.i.d. for seven days and obtained 100 percent cures.

In senile vulvovaginitis, continued estrogenic treatment is likewise of advantage in overcoming atrophy. A return to the mature type of epithelium is accompanied by a disappearance of symptoms.

Touching briefly on cervical disease, we believe that infection has been overemphasized and functional hypersecretion overlooked. In this connection the recent contributions of Wollner,[3] and of Bourne and Bond[4] are highly pertinent. While these authors make a strong case for a functional leukorrhea, the subject needs further study. At present, we are investigating some aspects of this problem.

In treating discharge it is well to be on the lookout for functional leukorrhea. It results from an endocrine hypertrophy and hyperplasia of the endocervix with an accompanying outpouring of an alkaline mucoid secretion. This is a factor in the development of erosions, and the production of suitable environment for the trichomonas vaginalis vaginitis. Unless the excess cervical secretion is eliminated, cure of the erosion or of the trichomonas vaginitis is impossible. Treatment can be directed at the underlying endocrinopathy or at the overactive endocervix. While endocrine therapy of functional leukorrhea is still in an embryonic stage, there are many methods for the elimination of an overactive endocervix. Among these are the scalpel, the actual cautery, conization, and electro-coagulation. Each must be used with careful discretion. No one method is suitable for all cases.

In approaching the subject of menstrual disorders, it is well to remember that the first principle in the therapy of any condition is an accurate diagnosis. For some years our group has been engaged in studies relating to the diagnosis of the disorders of menstruation. A detailed exposition of the

*Read before the General Session, Annual Session, Oklahoma State Medical Association, April 22, 1942, in Tulsa.

experiemental evidence which we have obtained can be found in previous publications.[5-6-7] On the basis of this evidence we have formulated a working concept which may be stated as follows: "A functional menstrual disorder can result from a lesion in any of the endocrine glands or from some general constitutional condition secondarily affecting the endocrine system. Whatever the primary disease conditions, it operates by producing a disturbance of the endocrine activity of the ovary, and this in turn gives rise to abnormal conditions in the lower genital tract. The endometrium indicates roughly the degree of ovarian involvement. There is no constant correlation between the primary lesion, the endometrial changes, and the type of menstrual disturbance."

From this it follows that ovarian, pituitary or thyroid disease and other types of endocrine or nonendocrine disease may give rise to endometrial changes and menstrual disorders of identical types, and each, on the other hand, may cause endometrial changes and menstrual disorders of quite different types. In other words, a menstrual disorder is not a disease but a symptom, referable to a variety of conditions. These disorders are not local disturbances; they are expressions of constitutional abnormalities and must be considered from the general, rather than the local standpoint.

The first step is to rule out organic pelvic disease, such as abortion, fibromyoma, carcinoma and so forth. Occasionally, this is difficult. A common error is to treat symptoms resulting from a small submucous fibroid by endocrine means. Conversely, other fibroids may be removed and an associated endocrine lesion overlooked. Diagnostic procedures such as the uterosalpingogram and the endometrial biopsy deserve mention here.

Having eliminated organic lesions, we must next determine the endocrine gland primarily affected and the presence and nature of contributory conditions, if any. For this, a thorough history and general examination are a requisite, with special attention to the constitutional status. It should never be forgotten that the elimination of the contributory disease and the proper and intelligent application of general medical measures directed at building up the general health of the patient are the keystones on which successful endocrine treatment rests.

With respect to endocrine diagnosis our knowledge is admittedly incomplete but sufficiently accurate to be of clinical value. Hormone assays and extensive laboratory tests are not necessary. The only essential special studies include endometrial biopsy, a few simple physical measurements, sugar tolerance tests (by oral galactose method or the usual glucose tolerance curve) and basal metabolism determinations. Goldzieher's[8] specific dynamic action test may be of value in conjunction with the B.M.R. These studies can be carried out efficiently in the office as well as the hospital.

A working knowledge of the endocrine states supplemented by any of the standard texts on endocrine diagnosis will give the information necessary for interpreting the data obtained from history, physical examination and special studies. Evaluation of the data will usually lead to a working appraisal of the situation which will be found to correspond with the final diagnosis in a satisfactory percentage of the cases. After the tentative diagnosis is made, one is in a position to select the proper methods, endocrine and otherwise, indicated in a specific case.

The physiologically-minded gynecologist, in his attack on the problem of functional menstrual disturbances, has, as his objective, the return to the normal cyclic variations. This cannot be done in every case, and in such instances he approximates the norm as best he can, under the existing circumstances. Reorganization and restitution of the patient's genital interrelationships with an eye to her total structure, her future needs, her psyche and her sex life, he keeps in mind constantly. Resort to surgery he holds in abeyance. He has at his command a number of endocrine preparations, one or a combination of several of which may enable him to restore useful function to the patient. The products include the gonadotropes, the sex sterols and thyroid.

Gonadotropes are of three kinds: (1) chorionic; (2) pituitary; and (3) equine.

The chorionic gonadotrope, formerly referred to as the anterior pituitary-like hormone (A.P.L.) is derived from pregnancy urine or placenta. Many excellent preparations are available. In intact animals, they produce ovulation and corpus luteum formation, but in hypophysectomized animals they produce only theca luteinization. These extracts have been widely used clinically, more frequently formerly than at present, with varying degrees of success. Some investigators continue to obtain exceptional results, while others, notably Hamblen,[9] doubt their therapeutic worth. The excretion of an increased amount of pregnandiol follows their use; however, it seems definitely proved they do not produce ovulation or structural changes in the mature human ovary or endometrium.[10] Their most reliable action is a gonad-maturing one, best seen in male cryptorchidism and indicated in young girls with primary ovarian failure. In elderly women with primary ovarian failure they are apt to be worthless. They are useful in secondary

ovarian failure for their stimulative action during the time one is waiting for more specific measures to take effect. On the whole, too much has been claimed for these preparations, which, however, are useful when used according to their indications.

The pituitary gonadotropes are derived from the gland itself and consist of two fractions: follicle stimulating and luteinizing. Ovulation is dependent upon a proper combination of the two fractions. Unfortunately these extracts with their wide potentialities for stimulation and restoration of normal function, have not been produced in a sufficiently stable form to render them useful clinically until quite recently. They are now in the process of clinical evaluation.

In the last year, work has been done on a preparation which combines chorionic gonadotropin and the pituitary synergist. This product, termed Synapoidin (Parke-Davis) has been reported to produce increase in ovarian size and follicle growth with luteinization.[10] Untoward effects such as overstimulation, hemorrhage into follicles, and cyst formation are seen from overdosage.[11] We have observed comparable effects at laporotomy in cases to whom this preparation was given pre-operatively.

Equine gonadotropes are derived from the serum of the pregnant mare. The use of this substance, P.M.S., has been reported to produce startling results by Davis and Koff,[12] Siegler[13] and others. We have not been impressed by its efficacy in producing ovulation in the woman with subthreshold ovarian activity, but have noted that supernumerary ovulation can be produced in the normally-ovulating woman. These preparations may have some value perhaps in the treatment of first-degree ovarian failure due to pituitary disease. Although the substance is said to be practically protein-free, one must test by intradermal and conjunctival tests for sensititvity before administration.

Some investigators have reported encouraging results from treatment with a combination of equine and chorionic gonadotropic preparations.[10-14-15] Greenblatt and Pund[10] state that bleeding induced with this combination occurs almost always from an estrogenic endometrium; no pregnant responses were obtained as regards menstrual cycles or ensuing pregnancies.

Sex sterols include the estrogens, progesterone and male hormone preparations. The estrogens are the most important of the group and are used by practically all practitioners. Their action is: (1) stimulative upon the luteinizing activity of the pituitary;[16] (2) sedative upon the nervous system;[17] (3) tropic upon the genital tract.[18]

Their use is indicated in pituitary failure because of the stimulative action on the pituitary, and because they substitute for the secondary deficiency in estrogen. In these cases it is usually advisable to use them in conjunction with thyroid, because of the action of this hormone on the pituitary and because of the secondary thyroid deficiency which often exists.

With regard to the second use, that on the nervous system, they are of value for the treatment of ovarian failure at or near the menopause or following operation. On account of this, they have been used extensively in menopausal conditions, although the observations of Pratt and Thomas[19] perhaps indicate that their effect has been overestimated. In my own practice, I have found them highly satisfactory.

As concerns the third use, action on the lower genital tract, the estrogens are extremely useful in the treatment of vulvovaginitis of infancy[20-19-21] and atrophic disturbances of the menopause.[22-23-24]

Hamblen[25] has reported excellent results from the treatment of menometrorrhagia by the cyclic employment of 10,000 I.U of estrogen daily for 21 days followed by five mg. of progesterone daily for five days. Most of the patients treated obtained regular cycles and some continued to menstruate regularly after cessation of treatment. This form of therapy is rational when applied to the pituitary and Ovarian groups. If used in thyroid cases, supplemental therapy with thyroid will be required.

In pituitary cases, dosages of the estrogens range from 1,000 to 10,000 I.U. per day (in the case of tablets orally) or from one to three teaspoonfuls per day of the preparation known as emmenin. For the vulvovaginitis of infancy, the dosage should be 1,000 I.U. daily in the form of a vaginal suppository. The amount necessary to control menopausal symptoms will vary according to the amount of estrogen produced by the patient's own ovaries. The average dosage ranges from 6,000 to 60,000 I.U. weekly. In some instance, larger amounts will be needed.

The practical value of the estrogens has been somewhat limited due to the expense and the intramuscular mode of administration. These disadvantages have led investigators to seek other substances with estrogenic activity and a number of these have been synthesized. Stilbestrol, recently released for general consumption, is the most important. This substance, obtained from stilbene, differs chemically from the natural estrogens, but has all their biologic properties. It is relatively nontoxic, effective orally, and much cheaper than the natural estrogens. By various methods of comparison, different authorities give various value for

the relative potency of one mg. of stilbestrol, compared with international units of estrone as follows: subcutaneously, one mg, equals 10,000 to 50,000 I.U.;[26-27-28-29-31] orally, one mg. equals 40,000 to 50,000 I.U.[27-28-29-30]

I have been fortunate in having had at my disposal a generous supply of this material which I have used in a large series of cases. A number of these patients had severe amenorrhea and were refractory to other forms of treatment. One milligram of stilbestrol daily for 25 days produced a menstrual flow in a high percentage of these difficult cases. Mild toxic reactions, chiefly nausea and vomiting have been observed. No serious reactions have been noticed. Reactions can be avoided somewhat by administering the drug at bedtime and combining it with small doses of phenobarbital.

Karnaky[32] reports successful results with the use of stilbestrol in stopping excessive uterine bleeding due to functional causes. Five to 25 mg. of stilbestrol in oil, according to the amount of bleeding, are given into the anterior lip of the cervix with a long needle and syringe. The patients can be kept from bleeding indefinitely. If the condition is not alarming and the bleeding mild, stilbestrol orally in five mg. doses daily can be used to control bleeding. Recently, I have had some success with this method.

Progesterone, the hormone of the corpus luteum, is now available commercially and has been used in a variety of conditions. In my own experience and that of others, it has proved to be of some value in cases of threatened abortion or functional uterine bleeding. Albright[33] states he has been using daily doses of five mg. for five consecutive days for the prolonged bleeding of glandular cystic hyperplasia. His objective is the production of endometrial regression. Zondek[34] reports he is using progesterone in a simplified treatment for amenorrhea. Fifty mg. of progesterone hypodermically or 300 mg. of pregneninolone orally over a two to five-day period are followed by bleeding.

The male hormone (testosterone propionate) has been the subject of intensive investigation regarding its action on the pituitary and on the female genital tract.[35-36-37-38] Its chief use in gynecology is for the control of uterine bleeding. Clinical reports indicate that daily doses of 25 mg. every other day for three or four days will usually control for the moment the severest forms of menorrhagia. Fairly complete control can be obtained by a monthly dose of 125 to 250 mg. If given in larger amounts, signs of masculinization may appear, as noted by Greenhill and Freed.[39] These are transitory and regress, for the most part, in a period of several months' time.

Thyroid is perhaps the most useful of all the hormones in the treatment of gynecological conditions. Its use is indicated in primary hypothyroidism and in hypothyroidism secondary to pituitary disease. In either condition the drug is given in doses sufficient to raise the basal metabolic rate to normal or until it produces symptoms. It is best always to start with a small dose, such as one-half grain each day, and to continue this dosage for a period of six weeks, at which time the metabolism is determined and the dosage increased by one-fourth to one-half grain. After another six weeks, the dosage is again increased by small amounts only. If symptoms appear before the metabolism reaches normal, the dosage should be reduced a little for a period of six to eight weeks and then increased again. It is almost impossible to find a patient who will not tolerate thyroid if given in this manner. Two points should be stressed. In the first place, there is frequently a paradoxical fall in the basal metabolic rate in spite of marked clinical improvement. Youmans and Riven[40] consider this a sign confirming the diagnosis and indicating good results. In the second place, in most cases of true primary hypothyroidism, the drug, once started, must be continued indefinitely. If it is discontinued, these patients return to their former disagreeable status and treatment has to be carried out all over again.

Radiation and surgery still occupy a prominent place in the treatment of menstrual disorders. Radiation may be depressive and destructive, or stimulative, as some term low-voltage dosage radiation. This latter has produced good results in the hands of Mazer[41] and others, and the dosage recommended apparently can do harm. However, there is still much to be learned concerning this form of treatment. Destructive radiation of the type employed near the menopause, (1,600 to 2,000 r) will, of course, stop bleeding and make the ovarian failure complete. In a carefully selected group of cases, this is the method of choice, but it should not be used in the younger age groups or in the cases in which the well-known contraindications exist. In the young patient extreme complications arise, frequently throwing her life out of balance; sexual, reproductive, and menstrual functions are lost; the major portion of the endocrine function disappears. Here, above all, preservation of useful function is mandatory.

In the consideration of surgery, we find curettage an excellent method to check bleeding temporarily and to allow time for specific measures to take effect. The endometrium thus obtained is valuable for ruling out carcinoma, and acting as an "indicator" tissue to determine the degree of ovarian involvement. In certain cases, hysterectomy as-

sociated with postoperative endocrine therapy is the most satisfactory means of treatment. I find myself frequently resorting to vaginal hysterectomy in those cases where there are associated pelvic lesions such as prolapse or cystocele; of course, as stated previously, an intensive investigation with the evaluation of the need for the menstrual and reproductive functions is considered for each individual; the preservation of useful function and the destruction of harmful disease is practiced with every patient to the fullest extent.

Fibroid tumors are a frequent cause for pelvic surgery. It has been shown by Nelson[42] (previously postulated by Witherspoon)[43] that these tumors have an endocrine significance. Not infrequently the tumors and ovaries are removed and an associated endocrine imbalance completely overlooked. In this connection, therefore, it is well to remember that surgery or destructive radiological procedures do not cure an endocrinopathy, but merely remove the symptoms and may exaggerate the underlying endocrine process. The endocrine status of these patients should be determined and they should be treated accordingly.

In conclusion let us again point out that the physiological approach invokes an appraisal of the patient's functional needs, of the functional disturbance, and of the physiological effect of treatment. Its watchwo is the maintenance of useful function.

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BRUCE R. HINSON, M.D.
ENID, OKLAHOMA

All of us who care for women during gestation are more or less aware of and familiar with the physiological adjustments that must be made during this period, and in many instances we can take steps to relieve many of their discomforts. We also readily admit that these women are subject to unusual emotional stress, but all too few of us take adequate steps to help the patients to obtain a better emotional equilibrium. I feel that sometimes the emotional discomforts and anxieties that these women feel far outweigh any physiological adjustments that must be dealt with. By heeding such symptoms as unusual irritability, persistent insomnia, and feeling of confusion we might do a great deal to prevent the development of a serious psychosis, or deepseated neurosis that would result in invalidism.

Approximately nine percent of all females committed to institutions for the mentally ill date their illness from a pregnancy. About 75 such women are committed to Oklahoma State mental hospitals each year. Formerly when certain mental symptoms appeared in pregnant women, doctors referred to these symptoms as a psychosis of pregnancy, considering this condition a clinical entity, but at present it is the concensus of opinion of psychiatrists that the psychoses appearing during or following pregnancy do not differ from the psychoses appearing in non-pregnant women. Any strain comparable to a pregnancy might precipitate the same mental difficulty. There are many instances in which women who have had preceding psychotic episodes develop very similar psychotic findings with pregnancy. The psychosis of pregnancy is not an uncommon occurrence, but appears less often than some sequelae. It is estimated that a psychosis appears about once in every 400 to 500 deliveries. This has been borne out by my personal experiences.

We classify the psychoses of pregnant women not only as to the type of psychosis, such as toxic-exhaustive, manic-depressive, or schizophrenic, but as to the time of its occurrence, whether during pregnancy, the puerperium, or lactation period. Any one of these three types of psychosis may appear in any one of the three stages mentioned; however, we usually see the toxic-exhaustive type in the latter weeks of pregnancy or late in the lactation period.

The toxic-exhaustive falls into a class of its own because as a rule it is obviously the result of a definite organic disturbance, such as puerperal sepsis, toxemia of late pregnancy, post-partum hemorrhage, prolonged nursing of the baby, or general debility. The psychosis usually disappears when the organic disturbance has been relieved. Atkin, 1938, reported acute delirium and prolonged confusion in the puerperium as the result of severe secondary anemia, and all patients were completely relieved by restoring the blood picture to normal by use of various iron compounds and liver concentrates. The toxic-exhaustive psychosis is the usual type that results from prolonged lactation, and is found more commonly in multiparous women who are malnourished, overburdened with the care of their other children, and who nurse their babies well into the second year. The condition is usually relieved by weaning the baby, taking away part of the mother's burdens or responsibilities, and initiating steps to help her regain a physiological equilibrium. She should also be placed under the care of a competent psychiatrist.

This type of psychosis is characterized by acute delirium and confusion arising from profound toxemia or exhaustion, and is not necessarily dependent upon previous emotional instability. The severity of the psychosis has a definite relation to the severity of the toxemia, and the psychosis is usually relieved when the toxin is removed. Individuals developing this toxic-exhaustive type, and who also have a neuropathic taint as a rule make a slower recovery and are given a poorer prognosis even though the toxin is removed. This group, as a rule, carries a high mortality, not because of the psychosis, but because of the underlying pathology. It takes a fairly normal physical constitution to withstand successfully a psychosis. According to F. M. Adams of the Eastern Oklahoma Hospital, individuals suffering from this type of psychosis give a much graver prognosis than do the manic-depressive and schizophrenic types. Of their admissions in the past five years, they have had an 80 percent mortality from this type of psychosis,

*Read before the Section on Obstetrics and Gynecology, Annual Session, Oklahoma State Medical Association, April 23, 1942, in Tulsa.

with almost the reverse being true of the manic-depressive and dementia-praecox types.

The psychoses appearing during gestation most commonly occur in the last trimester, and the vast majority are in women with a definite neuropathic or psychopathic taint. Many of them have had previous definite mental illnesses. The majority of them will be found to have been emotionally unstable, queer, and anti-social. Piker, 1938, found, in reviewing 946 cases of psychoses of pregnancy, that 24 percent of them occurred during pregnancy, and 76 percent occurred postpartum. The common types of psychoses developing during gestation are schizophrenia and the depressed phase of manic-depressive, although we do see some acute confusion and delirium in the latter months as a result of concurrent toxemia.

Quoting from McGeorge, 1938, *Mental Disorder and Childbirth*, "Pregnancy indirectly may give rise to a variety of conditions. For example, the fear of what should be a natural physiological process, engendered by reports of the maternal death rate, may result in an hysterical reaction. Pregnancy may be a period of mental stress to a perfectly healthy woman to which its associated pain and danger makes it an ordeal. It is even more so to one who is psychologically unstable. The presence of bodily disease and toxemia increases the danger of the development of psychopathic symptoms; for the toxemia alone is sufficient for this. . . . All authorities agree that revulsion to husband and child is a common feature of this form of mental disorder. The patient becomes very suspicious, depressed, and jealous, and suicidal tendencies are often evident."

Termination of the pregnancy because of the appearance of a psychosis does not alter the course of the psychotic process, unless it is due purely to an acute toxemia. Termination of the pregnancy might have a deleterious psychological effect in itself. Abortions, whether accidental or induced, may result in a depressive or confusional state because of disappointment or self-reproach.

I recall that during my internship I delivered a woman of her third child, all three of her children having been delivered in the sanitarium. The patient was admitted each time one month preceding delivery with an acute depression and marked suicidal tendencies, and each time, within two month following delivery, was discharged and remained well until her next pregnancy.

The onset of the purely functional type may be quite insidious, being preceded for several weeks by the patient complaining of sleeplessness, anxiety, indifference, and depression; or the onset may be very sudden, and the psychosis appear complete, the patient being almost uncontrollable within a period of a few hours.

My records show one patient, aged 26, primipara, having a perfectly normal prenatal course, with no evidence of toxemia until one month before delivery, when suddenly in the middle of the night, she awoke hallucinating, was disoriented, had bizarre delusions and hallucinations. She was given constant attendance the following month and subsequently delivered, without difficulty, normal full-term twins. Following delivery there was an increase in her psychotic symptoms, and she was transferred to a mental hospital. Six weeks later she was successful in a suicide attempt.

According to most authorities, psychoses developing in the latter weeks of pregnancy give a better prognosis than those appearing in the very early months, but this has not been my experience.

If the obstetrician is to serve his patient well he must have knowledge of the patient's previous emotional stability. Inquiry should certainly be made into previous nervous conditions and information obtained as to the emotional stability of the patient's immediate family. With this knowledge the doctor will be forewarned if the patient has apparent pre-psychotic symptoms. By taking adequate steps to combat insomnia, increasing irritabiltiy, and moodiness he may be able to forestall a serious mental breakdown. If necessary, an attempt should be made to lessen the family difficulties and responsibilities of the patient. Adequate sleep is an absolute requirement, and sedatives should be given in sufficient quantity to obtain rest. The usual barbiturates will suffice.

Seventy-five percent of the women developing psychotic symptoms do not do so until after delivery. The time of onset varies from one week post-partum to 14 or 16 months. In this group we find many cases that are due purely to toxemia and have no hereditary taint as a foundation for their illness. This toxic type is usually violent, appears suddenly, and as a rule runs a relatively short course, either to recovery or fatality. Many of these die, not as a result of their psychosis, but, as I have pointed out elsewhere, as a result of their underlying sepsis or toxemia. With immediate and proper care for the toxemia, some of these women will make an uneventful and complete recovery from their psychotic symptoms. Those that die of their psychoses usually are suicides. Individuals that carry the unfavorable prognosis and have the longest re-

covery time are those that have had previous mental illnesses or have a definitely bad heredity.

The care of these people after delivery should be in the hands of a competent psychiatrist. Those presenting depressed symptoms of a manic-depressive psychosis can be given a fairly good prognosis for that particular phase, but no assurance can be given as to the possibility of recurrence; however, the probability is that with each subsequent pregnancy there will be a return of the psychosis. The advisability of further pregnancies depends entirely upon each individual case, and the patient should rely on the judgment of the psychiatrist.

Probably the most serious type of psychosis is a schizophrenia developing in the early weeks following delivery. The onset is usually slow, appearing in individuals who have had definite schizoid personalities. They have always been more or less seclusive, solitary, and sensitive, and given to day-dreaming. With the onset of their illness they ordinarily become indifferent, caring little about their personal appearance, their social obligations, and their usual work. This indifference occasionally extends to actual neglect of the new baby. Many cases of infanticide are the direct result of an unrecognized schizophrenia. All of these individuals are institutional cases. It is impossible to predict what they might do next. They do not show the marked suicidal tendencies of the depressed manic-depressive. They commit suicide usually by accident rather than by design.

Before the advent of various types of shock treatment for schizophrenia, this type of psychosis, appearing post-partum, was given a very grave prognosis. It still carries a more serious outlook than does the manic-depressive type. Since the introduction of the insulin, the metrozol, and electric shock treatments, the outlook for the schizophrenic patient is much brighter. As a rule they have a longer recovery time and their recovery is less complete than the other forms of psychosis. Few psychiatrists will trust the recovery to the extent that they will advise subsequent pregnancies.

At present I have a patient with a schizophrenic remission of one year's standing. Very suddenly she developed a hebophrenic phase of schizophrenia about six weeks post-partum. She had a very definite neurotic history, but had delivered one normal, full-term child two years previously without any mental difficulty. She became fairly well stabilized after about 35 shock treatments, and four months confinement in a mental hospital. At present she is at home doing very well, but under reduced responsibilities.

SUMMARY

1. There is no true psychosis of pregnancy. The pregnancy merely acts as the precipitating cause, similar to any other stresses that bring on a psychosis.

2. The obstetrician may do his patient a great service by properly evaluating her emotional stability.

3. Active treatment of the prodromal symptoms may avoid the precipitation of a psychosis.

4. The new advances in psychiatric treatment have given these patients a much better prognosis.

5. The advice of a psychiatrist should be sought, and his recommendations followed from the earliest development of serious symptoms.

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DISCUSSION

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This has been an excellent presentation of a very important clinical problem. Dr. Hinson has given an accurate summary of available information and has correlated this with his own experiences. There is really very little to add and the discussion can best be directed toward emphasis upon certain facts.

Although a psychosis appears only about once in every 400 to 500 deliveries; it should be mentioned that borderline psychotic states and distressing neurotic symptoms complicate the gestation and post partum periods with at least an equal if not a greater frequency than the occurrence of psychoses.

A study of the personality background of the pregnant woman is very important. If the individual develops emotional instability in relationship to pregnancy, and if a careful study reveals no evidence of previous similar distress; a toxemia arising out of some definitely discernible organic pathology should be assumed.

The toxic-exhaustive psychoses are perhaps more specific than other types, and constitute a very serious problem, with a high mortality rate.

It has been correctly pointed out that there is no such thing as a psychosis of pregnancy. This may be said in relationship to all of the so-called "functional" psychoses, because as yet nothing is really known regarding a specific etiology of these disorders. Even such assumed clinical entities as dementia-praecox, involutional psychoses and manic de-

pressive psychoses so overlap in their manifestations that the diagnosis of either one is a mere name for something about which very little is understood.

It is likely that the content of delusions are largely conditioned by current problems of the individual. The frequent occurrence of, and fears of impulses in the mother, that she may injure, or even murder the infant, would be replaced by some other type of impulse under different conditions of stress. The above symptomatology constitutes, however, the only specificity with reference to the psychoses of pregnancy.

A careful study of 50 consecutive cases who have come under personal observation reveals that those who develop psychotic symptoms early in pregnancy have the most unfavorable prognosis. Those who develop symptoms insidiously after three or more months following delivery also offer a serious prognosis. The patients who develop psychoses immediately following delivery or acutely in the late gestation period have shown a more favorable recovery rate.

The symptoms of anxiety, insomnia, obsessions, fears, and depression that occur during pregnancy and following delivery should be treated by correction of any physical complications, suggestive therapy reassurance, and sedation. Sodium amytal has proven to be the drug of choice. If adequate response to this treatment does not occur, the physician should suspect the possibility of a malignant psychiatric disorder.

A careful inventory of the personality background in every obstetrical case should be made by the physician. Certainly a history of prevoius nervous breakdown or severe emotional instability should place the physician on guard as to the probability of a potential psychosis. Psychiatric consultation is necessary in circumstances under which malignant symptoms such as hallucinations and extreme depression become manifest, and in those instances when the more minor symptoms do not respond to ordinary therapy.

A careful investigation as to the existence of organic toxic disturbances should of course first be made. As Doctor Hinson has pointed out, advising relatives to whether the patient should become pregnant again is an individual matter, but as a rule it is well to advise sterilization at an appropriate time following recovery from the psychosis in those with a history of inadequate personality structure prior to pregnancy.

Shock therapy cannot be used during pregnancy but has been given without complications as early as one week following delivery. It is certainly the treatment of choice in the depressions with suicidal tendencies. Electric and metrazol shock are used in these cases. Perhaps insulin treatment is preferable in the schizophrenic psychoses that come on insidiously. Electric and metrazol are used with fair results in the acute schizophrenic disorders. The toxic exhaustive psychoses are treated by an attempted removal of the cause for the toxemia, adequate food and fluid intake, proper elimination, supportive measures of various types, hydrotherapy, vitamin therapy, and in selected cases, electro-shock may be tried.

Early treatment of the beginning symptoms as emphasized by Doctor Hinson is most important and undoubtedly is preventive of later serious complications.

Hygiene in the Tropics*

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This paper is the result of a request by some of the younger physicians in Oklahoma City for a statement about life in the tropics. These young men believe that some of them might be called upon to live or do medical service in a tropical climate. The basis of my knowledge of life in a hot climate is seven years spent in Zululand, South Africa. A part of this time was devoted to medical mission work and a part to service for the South African government.

Life in the tropics differs from life in Oklahoma in the following ways: (1) excessive heat; (2) excessive moisture; (3) the presence of numerous insects with the prevalence of insect-born diseases; (4) poor hygienic standards of tropical people; (5) danger of moral and physical degeneration due to the above factors.

HEAT

Anyone who has spent a summer in Oklahoma can appreciate what prolonged and excessive heat can do to one's energy and initiative. In the tropics the excessive heat is continuous, and causes profuse perspiration. In many tropical climates there is excessive moisture in the atmosphere which interferes with the evaporation of perspiration. This causes clothing to feel sticky and clammy

*Read before the Section on General Medicine, Annual Session, Oklahoma State Medical Association, April 22, 1942, in Tulsa.

and the individual is not cooled as he is in a dry climate. Increase in perspiration leads to a decreased urinary output and easy fatigueability. With hot nights one does not awaken rested and refreshed in the morning. Food spoils easily. Frequently, owing to the retarded state of civilization, ice is not available nor is electricity for the preservation of food. This means that in many places in the tropics canned foods, including milk, and hot drinks, must replace fresh foods and iced drinks. Moreover, fresh vegetables which have been raised under proper conditions of sanitation frequently are not available. Respiratory diseases, scarlet fever, and acute rheumatism are much less frequent in the tropics, but there are many more cases of gastro-intestinal infections and insect-born diseases, such as malaria, dengue fever, yellow fever, sleeping sickness, etc.

MOISTURE

Excessive moisture in the atmosphere is depressing, even in a temperate zone. An excessive moisture with a temperature in the 90's or above saps one's energy and initative. His clothing is damp, mildew gathers on clothes, leather goods, and on walls. To prevent mildew leather goods and clothes must be dried and sunned. If electricity is absent, fans are not available. During my stay in the tropics, air conditioning was unknown.

THE PRESENCE OF INSECTS

Life is a constant battle against insects. One must always be on his guard against mosquito bites. The battle to prevent mosquitoes from breeding and multiplying is unceasing. Houses must be screened and the screen doors kept closed. The screen must be of mesh small enough to exclude the fly and mosquito. Even in a screened house it is safer to sleep under a mosquito net, but that does not add to the person's comfort. The prudent householder in the tropics makes at least one weekly inspection of his premises to see that there are no stagnant pools of water. No tin cans or old glass should be allowed around the premises, for if they contain water, they are potenial breeding places for mosquitoes. No roof gutter pipe can be allowed to become obstructed; no mud puddle can be tolerated; even the palm trees must be inspected to be sure that no water collects between the branches and the trunk. Irrigation trenches have to be kept clean. In other words, every breeding place of the mosquito must be eliminated if at all possible.

During my stay in Africa a severe epidemic of malaria was spread by sugar cane. This cane was cut in areas where mosquitoes were infected, then transported some miles by rail. It was noted when the cane was unloaded that many mosquitoes flew out from the cane, and a very severe epidemic followed in this community. An infected mosquito can be carried by automobile, rail, or airplane, thus spreading either malaria, dengue, or yellow fever through distant communities.

The British in North Africa have lessened the instances of gastro-intestinal infection at least 50 percent by a constant battle against flies. This was accomplished by destroying refuse in which flies breed, by screening cooking quarters and by supplementing these methods of extermination by swatting, traps, and other means. When one remembers that in the Boor War and the Spanish-American War that more men died by gastro-intestinal causes than were killed by guns, the importance of the relationship between food and flies is at once apparent. Tropical ants are large and often vicious. They crawl into one's clothes if one lies on the ground. Their bite is agonizing and may result in severe infection.

POOR LOCAL HYGIENE

In most localities civilization is not far advanced. To date the white man with his advanced civilization has been kept from the hot climates partly by malaria and partly because he prefers the temperate zone. The other races which live in the tropics are not so energetic, they have low standards of morals, and usually are ignorant and superstitious. Intestinal disease and intestinal parasites abound. It is most difficult for a physician to instill into the minds of ignorant people who have no conception of bacteria, ideas of modern sanitation. If the native African believes that disease comes as a curse or as the result of evil spirits, it is hard for him to become enthusiastic about the destruction of mosquitoes and the draining of swamps. In the same way, it is hard to impress upon the tropical cook boy the need for sanitary measures in the preparation of food. The heat and moisture of the tropics affect the native, and thus help conduce his ignorance and indolence. The white man in the tropics is likely to suffer from ennui, and to relax his own physical and moral standards. Because of the lack of suitable amusement and activities, some white men have immoral association with native girls, many of whom have syphilis. Some drink excessively to relieve the monotony of life, hence the white man in the tropics needs to be warned of these dangers.

CLOTHING

For protection of the head the old sun helmet has proved its worth, but many helmets are hot and uncomfortable. A light double felt hat with some air spaces between the two hats is more satisfactory. The danger of sun stroke is always present. During the hot hours of the day one should, if possi-

ble, try to be in the shade. Though sunstroke may occur, it is not common. Most cases so reported are tropical malaria. If one is not exposed to direct sunshine, shorts, and shirts with short sleeves, open at the neck are preferable. To keep up one's morale, he should shave and dress for dinner.

FOOD

In the preparation of food it is most important to have intelligent and well-trained servants, if possible, servants who know something about hygiene and are intelligent enough to appreciate its value. One should never overeat or overdrink. As mentioned above, electricity and ice may not be available, and this rules out fresh meat, with the exception of chicken. The banana with its thick skin is rarely contaminated by disease. Vegetables should be washed very thoroughly, for they might have been raised in unhygienic surroundings.

WATER

Unless one is certain about the water supply, it is best to drink hot tea. This usually causes perspiration and thus helps to cool the body. Or, boiled water can be put in a porous earthen jar and hung where the breeze can strike it. The water slowly seeping to the surface, leads to rapid evaporation and cools the jar. Such water will be many degrees cooler in temperature than the surrounding air.

SLEEPING QUARTERS

As mentioned above, the sleeping room must be carefully screened and in every malaria-infected district it is wise to have in addition a mosquito net on a frame to drop over one's bed. Before turning out the light, the net should be lowered down over the bed, tucked in around the mattress, and the space underneath the net carefully inspected to be sure no mosquito is imprisoned. The net adds very little to the heat, but it certainly gives the sleeper a feeling of security. If one has to sleep in the open, he should have a net by all means. Smoke from fires and tobacco may help to drive away mosquitoes. The mosquito repellants such as oil of citronella or cod liver oil rubbed on the exposed surfaces helps somewhat to prevent mosquito bites.

MALARIA

Malaria has been the chief factor in keeping the white man out of the tropics. It may have been malaria which defeated Hannibal in the plains of Italy before he met the armies of Rome. Malaria may have been one of the causes for the overthrow of ancient Greece. Repeated military campaigns with resultant neglect of farm land and the development of swamps would result in malarial increases. It is known that some of the Grecian people lost their vigor and initiative and developed large spleens. The same might be said of the ancient Romans. It was malaria which prevented the French from building the Panama Canal. The malaria mosquito bites usually just before and after sunrise and just before and after sunset. If one can avoid being out at these hours, he may escape malarial infection. The question of atabrine and quinine for malarial prophylaxis is still debatable. However, if one has but a short period of duty in malaria- infected country and must be out at all hours, I believe it is wise to take at least ten grains of quinine daily to prevent the development of the infection.

In bathing, especially on the east coast of Africa, in Egypt, southern India, and Maylaia, one must remember the danger of bilharzia. This is contracted by bathing or washing in infected water, as well as drinking it. The disease is characterized by passing blood in the urine or bloody stools. It is so common in Egypt that no British soldier has been allowed to bathe or wade in the Nile or its tributaries. The organism cannot live in salt water. In salt water bathing, however, one must always remember the presence of sharks. These are supposed not to swim in active breakers.

SKIN INFECTIONS

Due to heat and moisture, skin infections are more prevalent and more difficult to heal than in other climates. Small abrasions and mosquito bites need to be sterilized and carefully protected so that infection will not develop. The treatment of snake bite is too long to be discussed in this paper.

The British have had more experience in tropical life than almost any other white people. In more than half of their cases where civil servants are sent home because of ill health, the etiology has been found to be nervous breakdowns and neurosthenia. The children of white parents in tropical climates tend to grow tall and gangling with a mild anemia. To some extent this tendency can be obviated by having the children spend the hottest part of the year in the mountains. If one is stationed in a tropical climate, he should ask the advice of either native residents or servants about the prevalence of malaria, intestinal disease, etc., about the danger of local bathing, and then take proper steps to protect his own health.

In this paper malaria has been mentioned repeatedly. It is a most serious disease and in tropical countries often it is deadly. The newcomer in the tropics must treat it with the utmost respect and do his best to avoid contracting the disease. If malaria and intestinal parasites can be avoided, a sojourn in the tropics should prove to be interesting and instructive without serious effect on subsequent health.

Coronary Thrombosis

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The circulation of the heart is not only of immense importance, but it is peculiar in that it constitutes the blood supply to a muscle, which is maintained by that muscle's own contraction.

In 1708 Thebesius, followed later by Haller, Morgagni and Senac, by careful dissections, came to the conclusion that anastomoses exist between both coronary arteries. Haller stated that these were quite rich and occurred with frequency at the root of the pulmonary artery, in the posterior sulcus longitudinalis, in the right ventricle, at the apex of the heart, on the surface of the ventricles and through the vasa vasorum of the great vessels.

1799 Parry and Jenner first interpreted the clinical syndrome known as angina pectoris as due to calcification of the coronary arteries and the autopsy findings on John Hunter's heart, after Jenner had diagnosed his condition, corroborated this view.

Many other investigators made reports pro and con as to anastomoses between the coronary arteries.

In 1880 Langor showed that anastomoses exist between the coronary arteries and those of the pericardium, and through these, with the internal mammary artery. He showed further that by means of the vasa vasorum of the pulmonary artery, connection also takes place with the bronchial arteries and through branches from the auricles, with the diaphragm.

In 1907 Spalteholz employed a chrome-yellow suspension in gelatine for injections with subsequent dehydration and clearing in benzol and carbon disulphide. By this method he was able to obtain a reconstruction of the cardiac circulation which was vastly superior to anything hitherto obtained. His conclusions were as follows:

(a) No end arteries exist in the heart.
(b) Rich anastomoses occur in all layers of the heart and, through the vasa vasorum, on the great vessels.
(c) In the thick muscle of the left ventricle, perpendicular vessels penetrate to anastomoses under the endocardium.
(d) The papillary muscles are particularly rich in anastomoses.
(e) With growth, the appearance of the vessels on the surface shows a typical alteration.

In 1921 Gross[1] published his classic monohim to the opinion that anastomoses exist and that the condition of the heart musculature and potency of the vessels played an important part in determining the degree of compensation which can take place after obliteration. He suggested that the vessels of Thebesius might serve as accessory nutritive channels in such cases.

In 1921 Gross[1] published his classic monograph "The Blood Supply to the Heart." His work consists of the study of 100 hearts at different age periods in which he injected barium sulfate suspension in gelatine. After injection, the hearts were x-rayed stereoscopically, cleared and then dissected and sectioned. His conclusions were as follows:

(a) Anastomoses exist between the right and left coronary arteries both in their capillary as well as precapillary distribution.
(b) Anastomoses exist between the branches of each coronary artery.
(c) Anastomoses in the heart are universal and abundant.

He also states that there is still no accurate knowledge of the exact nature as well as architectural arrangement of these anastomoses and that after a very careful study of this question he came to the conclusion that the heart is perhaps the richest organ in the body as regards capillary and precapillary anastomoses between branches of the same coronary artery as well as between branches from both coronaries.

The older the individual the more free and patent are the anastomoses. An old heart, is therefore much more prepared to receive with relatively little or no damage, the brunt of a sudden obliteration of a nutrient vessel.

Herrick[2] stated that a gradual obliteration of a vessel allows time for the existing anastomoses to widen and compensation to take place. Here Gross has shown that the arteriae telae adiposae are of considerable importance. These are what may be called fat branches. They are seen in greatest number in the fat under the pericardium, namely, in the grooves between the chambers and over the sites of the main coronary branches, where they exist as delicate parallel accompanying vessels whose distance from the main branches varies directly with the amount of fat present. They also form a rich network of interanastomosing delicate vessels upon the outer coats of the root of

the aorta and the pulmonary artery. These fat vessels arise largely from the first portions of the right and left circumflex arteries.

According to Wearn and his collaborators there exist in addition to anastomoses between branches of the coronary system, anastomoses between branches of the coronaries and those branches of the aorta which supply the pericardium. There are also arterioluminal vessels which connect the coronaries directly with the ventricular cavities, arteriosinusiodal vessels also connecting the coronaries with the ventricular cavities through myocardial sinusoids, and the Thebesian veins. Flow in these vessels increases when the coronaries are gradually blocked and then it may proceed in the reverse of the normal direction. The passage of dyes into the heart wall from the coronary sinus has also been described after experimental occlusion of the coronaries. It is possible that in early diastole the pressure in the right auricle may be adequate to move blood along in the reverse direction through Thebesian veins into the ventricle. The possibility that the heart obtains enough oxygen for light work, even from venous blood, is great, in view of its capacity to utilize the whole of the oxygen carried.

Clinical and experimental studies have demonstrated that there is often an extensive anastomosis between the right and left coronary arteries and between the branches of these arteries. This anastomosis exists chiefly between the smaller arterioles and probably, in the capillary bed. At times, the heart is capable of withstanding even extensive interference of the blood supply through the development of an effective collateral circulation. Instances are not infrequently encountered at necropsy in which the heart has recovered in a surprising fashion from the occlusion of one of the main branches of the coronary arteries. Smith[3] observed a case in which the descending branch of the left coronary artery was ligated in the repair of a stab wound of the heart, and following recovery from the operation, there was no apparent impairment in the cardiac function.

The first case of coronary occlusion correctly diagnosed during life was reported by Dr. Adam Hammer of St. Louis. He saw the patient in consultation on May 4, 1876 and gave a masterly description of the history and physical findings, part of which I will here repeat. "The percussion of the cardiac area showed no abnormal dullness, the heart could be outlined on the chest without great difficulty and as far as position and size were concerned must be considered as normal. Percussion of the lungs also showed no dullness, so that one was justified in excluding a pleuritic effusion as well as pneumonia or any other infiltration. Auscultation of the lungs showed everywhere normal respiratory sounds, only here and there were a few fine rales, such as commonly occur in marked hyperemia of the lungs.

"The auscultation of the heart however, showed some remarkable findings. The heart beat was weak, one every eight seconds. Upon the sound of each systole and diastole which although weak could be clearly made out and were without any murmur, there followed immediately a clonic spasm of the heart, which beat forcibly upon the applied ear with a sort of rustling, lasted exactly five seconds with the same intensity and then ceased as if cut off. I can compare these rapid successive twitchings of the heart muscle with nothing better than with the marked tremor of the hand of a man who is suffering from delirium tremens.

"What impressed me particularly about this case and attracted my attention in the highest degree, was the sudden appearance and the steadily progressive course of the collapse. I thought that only a sudden, progressively increasing disturbance in the nutrition of the heart itself such as a cutting off of the supply of nourishment could produce such changes as this case showed, and that such an obstruction could be produced only by a thrombotic occlusion of at least one of the coronary arteries. From lack of ground for any other satisfactory explanation, I was carried away by this thought. I mentioned my conviction to my colleague at the bedside. He, however, had a nonplussed expression and burst out 'I have never heard of such a diagnosis in my whole life' and I answered 'nor I also.'"

Permission for an autopsy was obtained from the relatives. The autopsy findings confirmed the diagnosis. Hammer remarks that obtaining of an autopsy in America is attended by great difficulties and goes on to say, "How often have I purchased this permission by giving up my fee for professional services and in certain cases I have had to pay money out of my pocket in order to succeed."

Doctor Hammer returned to Europe in 1877 and this case was reported in Vienna in 1878.

In 1896 George Dock published the first account of a case of coronary thrombosis in America diagnosed during life and confirmed by autopsy findings.

During the years that it has been my privilege to practice medicine no condition has interested me more than coronary thrombosis. Thirty years ago very little was known about the clinical manifestations of

acute obstruction of the coronary arteries. Herrick in 1912 gave one of the earliest clinical descriptions and emphasized the fact that the condition need not be fatal.

ETIOLOGY

Heredity seems to play an important part. In the majority of cases atheroma is to blame; this consists of senile softening with yellowish fatty areas in the endarterium. Thickening and calcification ensue and the arteries may become brittle. The frequency of coronary disease in myxedema supports the idea of a factor of disturbed metabolism.

Syphilis, rheumatic disease and diabetes have seemed to be an etiological factor in some cases. Congenital abnormalities of the coronary arteries may rarely be a cause.

Many other factors such as tobacco, alcohol, high protein diet, overwork, infection and faulty metabolism have been mentioned, but none have been proved or consistently found. Hypertension is frequently followed by general arteriosclerosis, including sclerosis of the coronary arteries.

Coronary disease predominates in males, various studies giving ratios ranging from 4:1 to 7:1.

Leary in 1934, after detailed microscopic study in a large group of cases of coronary sclerosis thought that the changes represented a disturbance in the lipoid metabolism of the body.

Willius[4] made a study of the plasma lipoids in coronary disease and in normal persons as controls. The patients comprised those of the fourth to the eighth decades inclusive. The lipoids studies included cholesterol, cholesterol esters, lecithin, fatty acids and total lipoids. This study consisted of 107 cases of coronary sclerosis and 200 cases in the control series. The results were rather striking in that he found a significant increase in all the lipoids in the patients with coronary sclerosis.

Some interesting speculations may be introduced as a result of these studies. For instance, man is the only known creature that dies relatively young from coronary disease and if he attains an advanced age, atherosclerosis universally develops. Furthermore, man is the only known creature who, from soon after birth to old age partakes of a diet relatively high in fat, including such foods as milk, cream, butter, eggs and animal fats. Atherosclerotic lesions closly resembling those of man have been experimentally produced in herbivorous animals, notably in rabbits, by the feeding of diets rich in cholesterol. It thus seems probable that some relationship between hyperlipemia and atherosclerosis exists.

Willius goes on to say that the lipoid hypothesis of coronary disease, becomes of special interest for it offers the only tenable explanation to date of the discrepancy in incidence, according to sex. It is acknowledged that, during pregnancy, the storage of lipoid in the body is greatly increased as part of a physiologic reaction for the nutrition of the developing fetus. It, therefore, appears logical to suggest that women are endowed with a more active and perhaps more perfect metabolism, which permits them to utilize completely the recurrent excesses of stored lipoid and to accomplish this without incurring arterial deposition. Men, apparently, are not endowed with such an active and perfect lipoid metabolism.

During recent years there has been some differences of opinion as to the part that unusual exertion or emotion might play in precipitating a coronary accident. Paterson[5] states that actually there is definite evidence to prove that hours or even days elapse between the time of the inception of the thrombus and the moment when occlusion, with its resulting cardiac pain, occurs. He reports two cases that came to necropsy and in which the pathologic study revealed that formation of a thrombus was a gradual and not a rapid process and says that in order to eliminate physical exertion or emotion as a precipitating factor in coronary thrombosis, the activities of the patient should be investigated not only for the few hours prior to the attack but for many days previously. He gives two principal factors which appear to be involved in the mechanism of capillary rupture: (1) softening, by atheroma, of the tissues surrounding and supporting the capillary wall, (2) high intracapillary blood pressure.

The age incidence of coronary thrombosis and intimal hemorrhage corresponds roughly with that in which atheroma usually develops, i.e. late middle life. Intimal capillaries, because they arise directly from the main coronary lumen, are exposed constantly to a relatively high blood pressure and because of their peculiar position, will be sensitive to sudden increases in the coronary blood pressure and should this occur, these capillaries will be in imminent danger of dilatation and rupture, particularly if the surrounding tissues are in a state of laxity from atheromatous degeneration.

James B. Herrick[6] presents a number of conditions which he has seen mistaken for coronary thrombosis and which should be mentioned in this discussion. Angina pectoris and coronary thrombosis are closely related pathologically. Thrombosis may be an incident in the history of frequently recurring angina of effort. From the standpoint of prognosis and treatment, it is worth while to distinguish, if possible, between the

pain brought on by effort, which disappears after rest and use of nitrates, and the more enduring pain which may come on without provocative effort and is accompanied by shock, dyspnea, arrhythmia, fever, leukocytosis, and altered electrocardiogram. The one condition speaks for a temporary relative ischemia of the cardiac muscle, the other for a more permanent ischemia. It should be remembered also that in some cases recurring attacks of angina are the sequelae of thrombosis and that angina of effort may cease after a coronary occlusion has converted the area of muscle that previously caused the pain into a scarred area, practically dead, inert and painless.

Arrhythmias: Cardiac irregularities not dependent on a coronary lesion may stimulate acute coronary obstruction, particularly if they occur in suddenly developing paroxysms—extrasystoles, auricular fibrillation or flutter. All the classical signs and symptoms of coronary occlusion (precordial pain, fever, leukocytosis, feeble pulse, low blood pressure and inversion of the T wave in the various leads of the electrocardiogram) may frequently occur at the onset of paroxysmal auricular tachycardia. It has also been pointed out that the coronary T wave of the electrocardiogram may occur in pericarditis with effusion.

Frank cases of neurocirculatory asthenia may usually be easily recognized. On the other hand, this condition may present a difficult puzzle.

The pain and distressed breathing, together with changes in cardiac action due to syphilitic aortitis, with or without definite aneurism, may be misinterpreted. So may the sudden severe pain of a dissecting aneurism—which occurs usually in a non-syphilitic individual with hypertension, with its shock and frequently altered heart rate and rhythm. Rupture of the aorta into the pericardial sac, a not uncommon termination of dissecting aneurism, may resemble acute coronary thrombosis.

Cases of pleurisy, pneumonia, carcinoma of the bronchus and massive collapse of the lung have been mistaken for acute coronary obstruction.

Acute spontaneous pneumothorax has been the cause of the error. An embolus, perhaps a thrombus, in the pulmonary artery, unless the embolus is small, may cause symptoms that mimic those seen in the fulminant type of acute coronary obstruction. Herpes Zoster may be a source of diagnostic error, at least until the skin lesion appears and is recognized.

Symptoms caused by abdominal conditions may simulate those of a cardiac accident. To remember this possibility and to exclude these causes first is usually all that is necessary.

Coronary thrombi are not unusual in diabetics, who are prone to have arteriosclerosis. Oncoming coma may simulate a coronary attack. On the other hand, one must not too hastily diagnose chronic unrecognized diabetes in a patient who has an acute thrombosis, for sugar in the urine is not unusual in patients suffering from this accident.

THE CLINICAL PICTURE

As a general rule the patient is suddenly seized with a severe substernal or precordial pain. The pain may be referred into the shoulders, the upper midback, the arms or the neck. In some instances the pain may be in the upper abdomen and simulate some acute surgical condition. In the more severe cases the pain is followed by shock, (weak, thready pulse, pale cold clammy skin covered with perspiration, low blood pressure). The facial expression is usually one of apprehension and the breathing may be rapid and difficult He is usually found propped up in bed or sitting up in bed or in a chair as this position is more comfortable and these individuals are often kept in this position in contra-distinction to the treatment of shock from other causes in which the foot of the bed is usually elevated. Cases of coronary thrombosis without pain have been reported and undoubtedly do occur. Cardiac irregularities, particularly auricular fibrillation may be observed especially in patients with posterior infarction. In anterior infarction a pericardial friction rub may be heard after 12 to 48 hours. Fever and leucocytosis occurs usually on the second day following the accident. Levine[7] brought out an important fact in that fever is often overlooked if the temperature is taken by mouth as these patients are in shock and the periphery of the body may be actually cold in the presence of a true fever. This error will be avoided if rectal temperature is taken.

The development of mural thrombi often results in embolic phenomena and is always a dreaded and serious complication. In one of my patients this occurred on the third day with what appeared clinically to be emboli in the abdominal viscera, producing severe upper abdominal pain that could not be relieved by frequent doses of opiates, death occurring on the fourth day following occlusion. In another case of a man who developed pulmonary emboli with bloody sputum and numerous rales in the chest, recovery took place. If emboli come from the left ventricle, hemiplegia, renal, splenic or mesenteric infarcts may result or gangrene of one of its extremities. If they originate in the right ventricle pulmonary embolism or infarction occurs.

Nausea and vomiting may often be a distressing symptom and result from the disease or from the administration of opiates. There is often a sensation of discomfort in the epigastrium which usually comes on several days after the acute episode, and in some instances it is difficult to convince the patient that he does not have stomach trouble.

The heart sounds are usually muffled and different types of arrhythmias may occur. Rales are often present particularly in the base of the lungs and in cases accompanied by acute pulmonary edema, bubbling and sonorous rales are heard throughout the chest.

Pardee first established the fact during the early hours or days after attack, the ventricular complex may take on a peculiar form. This consisted of a high take-off of the T wave from the Q-R-S complex before the latter reaches the iso-electric line in one or another of the customary three leads. The T waves become rounded and dipped and finally peculiarly inverted.

Electrocardiography has not only been valuable in diagnosis, but has enabled us to predict in many cases the exact location of the area of infarction. Injuries to the anterior part of the heart generally occurring in the lower lateral portion of the left ventricle near the apex and resulting from a thrombosis of the descending branch of the left coronary artery are associated with one type of electrocardiogram. Similar injury to the posterior part of the ventricle, either resulting from a thrombosis of the circumflex branch of the left artery or of the right coronary artery, produce a different set of changes. In the former the high take-off of the T. wave with subsequent inversion of the T wave and the appearance of a Q wave in lead one. In the latter type these similar changes occur in lead three. Wilson has shown that while the changes in the T wave are often transient with even complete restoration of the normal appearing upright T wave, the changes in the initial ventricular complexes, notably the Q wave, are apt to be permanent. In this way one may be enabled to suspect months or years after an attack, that one previously had taken place. The recent introduction of the fourth or chest lead by Wilson, Wolferth and Wood has further increased the usefulness of electrocardiography.

TREATMENT

The first consideration is to relieve pain and combat shock. Morphine in ¼ grain doses repeated every 30 minutes if necessary, is used to relieve pain. Larger doses, even as much as one grain of morphine is advocated by some, but in my experience such dosage has been unnecessary and is not without danger. Pantopon and Dilaudid in 1/6 and 1/20 grain doses may be better tolerated than morphine in some instances. The use of oxygen by nasal catheter or the tent is often a life saving measure. Shock is combated by the use of heat and stimulants, such as coramine and caffeine sodium benzoate. In my experience, coramine has been a valuable drug in the treatment of shock. These patients are more comfortable with the head of the bed elevated 30 to 45 degrees. Complete physical and mental rest is of the utmost importance. Digitalis is recommended if signs of congestive heart failure develop and in cases of persistent auricular fibrillation. If paroxysmal ventricular tachycardia complicates coronary occlusion quinidine may be given three or four times daily, in three grain doses, as long as the tendency persists. If syncope occurs in the presence of a slow pulse in cases of auriculoventricular heart block, ½ or one cc. of 1:1000 adrenalin should be given subcutaneously, but if unconsciousness and ventricular asystole are present intracardial administration is indicated. In less severe cases of heart block, ephedrine by mouth will be sufficient.

The administration of glucose intravenously, 50 to 100 cc. of a 50 percent solution, after the acute symptoms have subsided is highly recommended by some cardiologists. I usually give strained honey or Dexin a pure form of sugar, in fruit juices several times daily. Normal saline should be given subcutaneously if dehydration develops. The bowels should be disregarded for the first few days. If necessary an enema may be given on the fourth or fifth day. The use of a bed pan is desirable.

Diet during the early days should be confined to liquids, gradually returning to a normal diet in small amounts.

A dry, slightly bitter wine such as sherry may be given before meals for anorexia. The judicious use of alcohol is thought by some to be of real therapeutic value in coronary disease. Tobacco is thought to be harmful and should be either entirely eliminated or firmly moderated.

In nervous patients a sedative, such as one of the bromides or barbiturates may be given as indicated.

The services of a nurse when this can be afforded by the patients is desirable at least for the first week or two.

Rest in bed for six or eight weeks, and in some cases longer, should be carried out. Then the patient may be permitted to be up in a chair and gradually increase his activities. It is desirable to limit his activities permanently to some extent. Periodic ex-

aminations every two or three months, should be encouraged. Ordinary physical examination may reveal no significant findings, while fluoroscopic and electrocardiographic examinations often offer much valuable information.

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Squibb Now Packages Diphtheria Toxoids According to New Recommended Dosages

Following the recommendation of the Committee on Administrative Practice of the American Public Health Association of two doses of diphtheria toxoid alum precipitated, or three doses of diphtheria toxoid, for immunization against diphtheria, E. R. Squibb and Sons, New York, are now supplying Diphtheria Toxoid Alum Precipitated Squibb in two-dose packages and Diphtheria Toxoid (Ramon) Squibb in three-dose packages.

The new recommended dosages are the outgrowth of comprehensive studies which have shown conclusively that a higher percentage of children receiving 2 x 1 cc. doses of diphtheria toxoid alum precipitated, or three doses of diphtheria toxoid, will be subsequently Shick-negative, than those children to whom only 1 cc. of diphtheria toxoid alum precipitated or 2 x 1 cc. of diphtheria toxoid—the heretofore commonly used dosages—is administered.

Squibb diphtheria toxoids are now packaged as follows:

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Diphtheria Toxoid Alum Precipitated Refined Squibb:
2 x 1 cc. vials,—(one complete immunization)
2 x ½ cc. vials,—(one complete immunization)
10 cc. vial —(five complete immunizations)
5 cc. vial —(five complete immunizations)

Opportunities for Practice

Announcement has been made of two vacancies in a hospital association in Arkansas, one for a general practitioner, and the other for a physical examiner and relief doctor. Both positions include salary, office supplies, and mileage allowances.

Any physician who desires more information should contact the Executive office, 210 Plaza Court, Oklahoma City.

An opportunity is open in a town of 1,000 population, with a large, surrounding trade territory of 2,000 population. Any physician who is interested in this opportunity may inquire for further information at the Executive Office of the Association, 210 Plaza Court, Oklahoma City.

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• THE PRESIDENT'S PAGE •

"The President's Page" was created primarily to provide the members of the Oklahoma State Medical Association a monthly report from their president. The writer now finds himself serving in a "dual capacity," president of the Association, and secretary of the Oklahoma State Board of Medical Examiners.

At this writing there is a very important matter that will confront the members of the medical profession, and it is the opinion of the writer that this page could not be put to better use at this time, than to call to the attention of the members that on June 1, and not later than June 10, they will be required to renew their licenses to practice medicine in this State.

The law does not make provisions for extension of time, neither does it provide that you be notified. Failure to comply with this law could subject you to prosecution, and the Board of Medical Examiners could suspend or revoke your license.

If you secured a permit last year, simply send in the $3.00 fee, and request a permit for this fiscal year. Be sure to sign your name in full. If this is your first registration, write for application and when you return the application, remit the fee.

Those of you who are members of your county medical society can do your fellow doctors, who are not members of their county society, a great favor by calling their attention to this law, and they will appreciate your effort in helping them.

James D Osborn

President.

EDITORIALS

THE STATE MEETING

The Fiftieth Anniversary meeting of the Oklahoma State Medical Association has passed into the realm of creditable history. Every member of the State Association is indebted to the retiring president for earnest and efficient administrative service; to the council for its fine spirit of cooperation and unselfish devotion in all of its deliberations; to the Scientific Work Committee for untiring persistence in building a splendid program, in spite of many obstacles; to the Tulsa group for their part in making the meeting a success. In this connection, the pre-convention buffet supper, presided over by Tulsa County's genial president, deserves special mention. Finally, the executive secretary and his efficient staff merit the highest praise.

As highlights of the meeting, history will hold that the scientific roundtable was an outstanding event. This is attested by the record attendance and the profound interest displayed throughout this special session, and made more obvious by the general manifestation of reluctance when the expiration of time made it necessary to close the conference.

Of equal historical moment was the president's inaugural dinner, characterized by the absence of the usual long inaugural address, and the presence of the versatile editor of the Journal of the American Medical Association. Those who heard Dr. Morris Fishbein will agree that in the course of 250 years, old Pepys has lost none of his erudition.

The performance of the guest speakers, bringing to us the best from the various special fields, deserves the highest commendation.

The plan of the Scientific Work Committee, which brought the total membership together in one group for the purpose of all out acquisition of general medical knowledge, including that coming from the highly specialized groups, was considered most helpful. At this time, when total warfare is smashing many barriers, especially in civilian practice, and making it necessary for doctors, as far as possible, to broaden their skills and enlarge their scope of activities, the plan seemed to be particularly fitting.

Obviously, the best specialists should be good, all-round doctors, because they have learned to look upon the patient as a composite whole in need of both physical and psychological consideration. Such a specialist, in case of emergency, can honorably return to the humble art of caring for the sick. Many modern doctors who view the problems of the patient with a level vision are inclined to approve the Scientific Work Committee's plan for the State Medical Association Programs in order that all may learn more about every phase of medicine.

It is generally admitted that the members of highly specialized groups in section meetings at state medical associations, usually spend their valuable time telling each other what they already know. In national association meetings, the highly specialized groups have the opportunity to learn what is new in the particular speciality of their choice, by calling attention to progress in widely separated sections of the country, but this does not relieve them of the responsibility of knowing something about the art and science of medicine as a whole.

Finally, the members of the State Association are indebted to the Federal Government for the informative and helpful discussions of "The Medical Doctor in Selective Service," by Major Robert A. Bier, and "The Procurement and Assignment Service" by Thomas A. Hendricks. The two addresses were so well received and they proved to be so helpful to many of those present, it would appear that the Program Committee should bear this in mind when the next annual meeting approaches. Even when the war passes, there will be many allied interests deserving our serious consideration and possibly a place on the program.

The occasion for these serious addresses warrants much concern and causes us to wonder what may be said of Oklahoma medicine in 1942-43 when our successors celebrate the one-hundredth anniversary of the State Medical Association. Let us strive to give it the luster of unfaltering devotion.

OLD AGE AND TRANSFUSIONS

In the light of present developments, it is interesting to note that James Mackenzie in his book, "The History of Health and the Art of Preserving It," printed by William Gordon in 1758, says that "care is due with regard to health, namely, in childhood, youth, manhood and old age." Significantly, he adds, "Of these four periods, the Gerocomice or care of old age, is the only one (so far as I know) taken notice of before Pythagoras."

Among the intriguing methods employed to sustain vigor and bring about rejuvenation, he refers to Ulysses' advice to his father, Laeretes, "in the last book of the Odyssey, line 258:

Warm baths, good food, soft sleep, and generous wine,

These are the right of age, and should be thine.

"On this passage Galen remarks that 'the poet's rule was excellent; which directed an old man, after bathing and refreshing himself with food, to take some rest; for old age being naturally cold and dry, those things which moisten and warm, as bathing, eating, and sleeping, are the most proper for it.'"

After a long, interesting discussion, Mackenzie closes by referring to the history of transfusion and its early purposes:

"About a hundred years ago, a new and gallant effort was made to mend distempered constitutions, and consequently to prolong life, by supplying the human body with young and healthy blood from other animals.

"The first hint of this great attempt was given at Oxford, anno *1658*, by Dr. Christopher Wren, Savilian Professor of Astronomy there, who proposed to the honourable Mr. Boyle, a method of transfusing liquors in to the veins of living animals.

"In 1666 his hint was farther improved, at the same perennial source of ingenuity and learning, by Dr. Richard Lower, who invented the method of transfusing blood out of one animal into another.

"He was followed by several ingenious men at London, and particularly by Dr. Edmund King, who rendered Lower's method of transfusion still more easy and commodious. And as it was intended by the royal society that those trials should be prosecuted to the utmost variety which the subject would bear, by exchanging the blood of old and young, sick and healthy, fierce and timid animals; various experiments were accordingly made with surprising effects upon lambs, sheep, dogs, calves and horses.

"From England this invention passed into France and Italy, where after old, decrepid and deaf animals had their hearing and the agility of their limbs, restored by the transfusion of young and healthy blood into their veins, and other wonderful cures had been achieved, J. Denis, doctor of physics at Paris, with the assistance of Mr. Emerez, ventured to perform the operation on men in that city: And Johann Gulielm. Riva, a surgeon of good reputation, made the same experiments at Rome."

After some over enthusiasm with reference to transfusions from animals to human beings, deaths occurred and the practice fell into disrepute and was prohibited by the Pope in Italy and the king in France.

The author closes the book with these significant remarks:

"Thus was defeated a noble essay, begun with prudence in England, but rashly pursued in foreign countries, which, had the first trials on the human species been conducted with care and caution, might in time have produced most useful and surprising effects.

"But after all, I am of opinion, that the greatest efforts of the human mind to extend a vigorous longevity much beyond fourscore, will generally prove ineffectual; and that neither the total alteration and discharge of old distempered humours, by a course of resolvent medicine, nor the substitution of fresh vital juices in their room, prescribed by the great lord Verulam and Boerhaave; nor the transfusion of young blood into our veins, tho' performed with the utmost precaution and dexterity, will ever avail to bestow strength and vigour on the bulk of mankind, for any great number of years, beyond the limits marked out by the Psalmist, and much less to produce rejuvenescency. Tho' I am persuaded, at the same time, that these methods prosecuted to accuracy, and reduced, if possible, to a general and easy practice, would make the life of man hold out, free from the usual complaints of decrepitude, longer than it does at present, since we see every day, that an extraordinary strength of constitution, managed with common prudence, often exceeds an hundred years."

Judging from this account the old boys from Homer and Pythagoras down, including Pliny Galen, Paulus Aegineta, and Boerhave anticipated our old age problem and wanted to do something about it. Also it is interesting to note Mackenzie's reluctance to give up his glimmering persuasion that the transfusion of blood possessed certain virtues that were being abandoned for want of accuracy and ease of practice. He was seeing the transfusion of blood "through a glass darkly," while we see it "face to face."

Vice-President of Upjohn Firm Dies

Malcolm Galbraith, vice-president and director of sales of the Upjohn company, died Friday morning, April 10, in Kansas City.

Mr. Galbraith was born in Bowmanville, Ontario, Canada, October 23, 1876. He received his bachelor of pharmacy degree at Ontario College of Pharmacy in 1898, entering the drug business in Ontario the same year. He later became a naturalized citizen of the United States. In 1909, he left the H. K. Mulford company of Philadelphia to join the Upjohn company. In October 1929, he was elected to the board of directors and named director of sales. He was made vice-president of the company in May, 1936.

ASSOCIATION ACTIVITIES

50th Anniversary Meeting Held In Tulsa, April 22, 23, 24

The Fiftieth Annual Meeting of the Association, held in Tulsa, April 22, 23 and 24, was highlighted by two new features—the Scientific Roundtable on Sulfonamide Therapy participated in by all guest speakers, and the substitution of a president's guest speaker for the Annual Inaugural Address given by the incoming President.

Morris Fishbein, M.D., Editor of the Journal of the American Medical Association, Chicago, was the guest speaker at the Inaugural dinner and spoke to on overflow crowd on "American Medicine in the War."

From the response given these two new features, there is little doubt that they will be retained by the Annual Meeting committee and the Council of the Association as permanent additions to the program.

Annual Election of Officers

New officers and members of the Council were elected Thursday morning, April 23, at the last meeting of the House of Delegates. Those elected to serve with the new president, J. D. Osborn, M.D., of Frederick, are James Stevenson, M.D., President-Elect, Tulsa; Galvin L. Johnson, M.D., Vice-President, Pauls Valley; George H. Garrison, M.D., Speaker of the House of Delegates, Oklahoma City, and H. K. Speed, M.D., Vice-Speaker of the House of Delegates, Sayre. W. A. Howard, M.D., Chelsea, was reelected as delegate to the American Medical Association, and Finis W. Ewing, M.D., Muskogee, the outgoing president, was elected as alternate.

New Members Elected to Council

New councilors were elected for Districts No. 6 and No. 7, J. V. Athey, M.D., Bartlesville, being elected to succeed James Stevenson, M.D., Tulsa, the President-Elect, in District No. 6, and Clinton Gallaher, M.D., Shawnee, to succeed J. A. Walker, M.D., of Shawnee, in District No. 7. All other members of the Council were reelected to succeed themselves.

Auxiliary Officers for 1942-43

The Woman's Auxiliary of the Association at its business luncheon, Thursday noon, held its annual election of officers, and the following members will direct the activities of the Auxiliary for the coming year; Mrs. Frank L. Flack, President, Tulsa; Mrs. F. Maxey Cooper, President-Elect, Oklahoma City; Mrs. J. L. Haddock, Vice-President, Norman; Mrs. James Stevenson, Recording Secretary, Tulsa; Mrs. H. Lee Farris, Treasurer, Tulsa; Mrs. Clinton Gallaher, Historian, Shawnee, and Mrs. E. D. Greenberger, Parliamentarian, McAlester. Mrs. Joseph Kelso, Oklahoma City, was elected delegate to the Annual Meeting of the Woman's Auxiliary to the American Medical Association.

105 members of the Auxiliary registered for the meeting, and out-of-state guests were registered from Chicago, Greenville, S. C., and Independence, Kan.

Nine Guest Speakers Presented

The Scientific Program of the meeting of the Association had as guest speakers: Charles C. Dennie, M.D., Professor of Clinical Dermatology, University of Kansas School of Medicine, Kansas City, Mo.; George Herrmann, Professor of Clinical Medicine, University of Texas School of Medicine, Galveston, Tex.; John C. Burch, M.D., Associate Professor of Obstetrics and Gynecology, Vanderbilt University School of Medicine, Nashville Tenn.; T. Leon Howard, M.D., Associate Professor of Surgery (Urol.), University of Colorado School of Medicine, Denver, Colo.; Titus H. Harris, M.D., Professor of Neurology and Psychiatry, University of Texas School of Medicine, Galveston, Tex.; M. Edward Davis, M.D., Associate Professor of Obstetrics and Gynecology, University of Chicago, the School of Medicine, Chicago; A. B. Reese, M.D., Assistant Clinical Professor of Ophthalmology, Columbia College of Physicians and Surgeons, New York City; Robert L. Sanders, M.D., Associate Professor of Surgery, University of Tennessee College of Medicine, Memphis, Tenn.; and Hugh L. Dwyer, M.D., Professor of Clinical Pediatrics, University of Kansas School of Medicine, Kansas City, Mo.

The Scientific Program was changed from the custom of past years in that all programs were conducted in the General Assembly Hall and followed each other consecutively. This allowed all doctors in attendance to hear the entire program. Whether this plan will be continued in the future will be determined by a survey to be taken among the members of the Association who registered at the meeting.

In addition to the guest speakers on the Scientific Program, the General Assembly was addressed by Major Robert A. Bier, Assistant Medical Director of Selective Service, Washington, D. C., who spoke on "The Medical Doctor in Selective Service," and Thomas A. Hendricks, personal representative of Frank Lahey, M.D., President of the American Medical Association, in the Office of Procurement and Assignment, who discussed the part physicians will play in national defense through the work of the Office of Procurement and Assignment and the State and County Medical associations.

House of Delegates

The House of Delegates completed its work in two meetings. Resolutions were adopted in behalf of the University of Oklahoma School of Medicine; endorsing the compulsory vaccination for smallpox and diphtheria program; expressing the opinion that the necessity under present state laws of placing on birth certificates the words "illegitimate" or "born out of wedlock" is to the detriment of the individuals concerned; expressing appreciation for the financial assistance given by the State Health Department, through the Children's Bureau, and the Commonwealth Fund to the Postgraduate Committee's program, and gratefully acknowledging to the Tulsa County Medical society the appreciation of the Association for the society's efforts in bringing about the present Group Malpractice insurance coverage for members of the Association through the London and Lancashire Indemnity company of New York.

In addition to these resolutions, the House of Delegates instructed the President to appoint special committees to study, for the best interests of the public, radio advertising of worthless nostrums and other forms of medication, and the rendering of expert testimony by physicians who are not qualified. The delegates to the American Medical Association were instructed to oppose any change in the rules of ethics of the American Medical Association which would make it not unethical for ophthalmologists to give lectures to and consult with opticians and optometrists.

Amendments

Two amendments to the Constitution were introduced, one concerning the time at which delegates to the American Medical Association would assume office, and the other defining the succession of the Vice-Speaker of the House of Delegates to the Speakership.

Amendments to the By-Laws were also introduced and passed. These amendments were: a provision for Associate membership in the Association; a provision for physicians to belong to adjoining county societies when permission is received from the society of the county of their residence; a provision for the revocation of honorary and associate membership; the creation of a standing committee on Prepaid Medical and Surgical Plans; a

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provision to allow honorary members to be counted as fully paid members in the consideration of the number of delegates a county society is entitled to send to the House of Delegates; a provision changing the duty of the selection of the Editor-in-Chief of the Journal from the Editorial Board to the Council; and a provision changing the manner in which the Scientific Program shall be arranged by placing the responsibility on the Scientific Work committee.

The House of Delegates also elected the following physicians to honorary membership: R. M. C. Hill., McLoud; Daniel F. Stough, Sr., Geary; S. P. Ross, Ada, and J. C. Duncan, Forgan.

The complete transcript of the proceedings of the House of Delegates along with the Council and Committee reports will be published in the June issue of the Journal.

Golf Tournament

The Golf Tournament which was held at the Tulsa Country club as a running tournament for the three days of the meeting found C. H. Cooke, M.D., Perry, winner of the Low Medal championship trophy, and Frank Stuart, M.D., Tulsa, the winner of the Lev Prichard runner-up cup.

In the Handicap flight, J. C. Peden, M.D., Tulsa, was first place winner and received the Nestle's Milk award, and Roy Emanuel, M.D., Chickasha, won the Industrial Printing company trophy as runnerup. Other physicians receiving awards were Charles Eads, M.D., Silas Murray, M.D., Paul Grosshart, M.D., Philip M. Schreck, M.D., and Jeff Billington, M.D., all of Tulsa; William P. Longmire, M.D., Sapulpa, and Paul Champlin, M.D., Enid.

Frisco Rates and Time Schedules For A.M.A. in Atlantic City

The following is a time schedule and rate list of the Frisco Railroad lines to Atlantic City, N. J., where the Annual Session of the American Medical Association will be held June 8-12, 1942.

These fares and the time schedule are given as of April 15, and are subject to change.

Rates

	FROM Okla. City	Tulsa
Round trip first class fare to Atlantic City, good for 30 days	$80.80	$77.95
Federal tax	4.04	3.90
Round trip first class fare to Atlantic City, good for 30 days, in one direction via New York City	86.10	83.20
Federal tax	4.31	4.16
Lower to Philadelphia (one-way)	12.50	11.90
Federal tax	.63	.60
Seat in parlor car, Philadelphia to Atlantic City	65c	
Federal tax	3c	

Schedule

Lv. Okla. City	Frisco "Meteor"		5:25 PM Daily.
Lv. Tulsa	"	"	8:25 PM Daily.
Ar. St. Louis	"	"	8:10 AM Next day.

	Pennsylvania RR		Baltimore & Ohio
Lv. St. Louis	9:12 AM	12:00 (noon)	9:30 AM Daily.
Ar. Philadelphia	5:51 AM	7:26 AM	10:30 AM Next day.

Via Pennsylvania Reading Seashore Line

Lv. Philadelphia	8:20 AM Daily	11:30 A M Daily.
Ar. Atlantic City	9:45 AM Next day	12:40 PM Same day.

State Board of Medical Examiners Hires Attorney

J. D. Osborn, M.D., Secretary of the Oklahoma State Board of Medical Examiners, Frederick, has announced that the Board has retained the services of Mr. L. L. Corn, 908 Perrine Bldg., Oklahoma City, as Attorney for the Board.

The position of Attorney was created by the enactment by the last legislature of the Annual Registration Act for doctors of medicine.

Mr. Corn will be the investigating officer in all cases of alleged violations of the medical practice act, and every member of the association should give every assistance possible to help Mr. Corn and the Board in the enforcement of the laws governing the practice of medicine.

All physicians should bear in mind that under the Annual Registration Act they must register annually with the State Board of Medical Examiners. The registration fee is $3.00 and must be paid on or before June 30 of each year. If the fee is paid by check, the Annual Registration card will not be issued until the check has cleared. All checks or money orders should be made payable to the Oklahoma State Board of Medical Examiners and should be sent to J. D. Osborn, M.D., Secretary, Frederick, Okla.

Pottawatomie County Society Holds Spring Conference

Dr. A. C. Ivy, Professor of Physiology in Northwestern University School of Medicine, Chicago, Ill., and Dr. A. E. Hertzler, Professor of Surgery in the University of Kansas Medical School, Halstead, Kans., were guest speakers for the Annual Spring Clinical Conference of the Pottawatomie County Medical society, March 28, in the Aldridge hotel, Shawnee.

About 75 doctors, including guests from Muskogee, Chickasha, Holdenville and Oklahoma City, attended the Conference. The afternoon program centered around gall bladder conditions, with Doctor Ivy speaking on "The Physiology of the Gall Bladder," and Doctor Hertzler discussing "The Surgical Aspects of the Acute Gall Bladder."

The subject for the evening program was thyroid conditions. Doctor Hertzler spoke on "The End Results of Total Thyroidectomy," and Doctor Ivy on "The Physiology of the Thyroid Gland."

Dr. Paul C. Gallaher of Shawnee, Committee Chairman, was in charge of the program.

Dr. Clifford C. Fulton, a member of the Association from Oklahoma City, has been placed in charge of a new naval organization school for enlisted men.

Doctor Fulton, a Lieutenant Commander in the naval services, is stationed at the U. S. Naval hospital, in Corpus Christi, Tex., where he was head of a Surgical ward before his promotion to head of the school.

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(2) Sanburn Metabolism machine, complete. Purchase price—$185.00.

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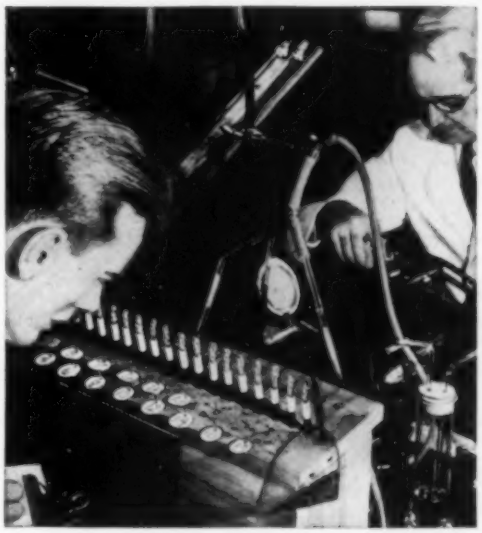

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** The Military Surgeon, Vol. 89, No. 1, p. 7, July, 1941

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MEDICAL PREPAREDNESS

War Session on Medical, Hospital Problems May 28 in Oklahoma City

The American College of Surgeons announces the scheduling of a "War Session" on May 28 in Oklahoma City, with headquarters at the Biltmore hotel. Invited to participate are all physicians, medical students, and representatives of hospitals in the states of Oklahoma and Kansas. The object of the meeting is to bring to them authoritative information on meeting the problems of wartime medicine, and outstanding speakers on the program will be representatives of the Surgeon Generals' offices of the United States Army and the United States Navy, and of the Office of Civilian Defense and the Procurement and Assignment Service.

The Oklahoma City meeting will be the last of a series of 27 meetings being held under the sponsorship of the American College of Surgeons in which participation has been provided for members of the medical and hospital profession in every state in the Union and the District of Columbia.

The meeting will open at 9:00 o'clock in two sections —one for the medical profession and the other for hospital representatives. Panel discussions on treatment of war injuries to the chest and on prevention and treatment of shock will occupy the first group. A forum on civilian defense as related to hospitals will be held by the second group.

At 10:45 a joint meeting for physicians, surgeons and hospital representatives will be conducted. A joint luncheon will follow with the Procurement and Assignment Service as the subject of discussion.

Separate sessions will again be held in the afternoon. For the medical group there will be panel discussions on treatment of wounds of soft parts and on fractures. For the hospital group has been arranged a panel discussion on special problems incident to the war as affecting hospitals.

The evening program will commence with dinner at 6:00 o'clock followed by panel discussions on treatment of burns and of war injuries to the skull and face. The medical and hospital groups will participate jointly in the dinner and evening programs.

The "War Sessions" supplant the usual Sectional Meetings of the American College of Surgeons. The large attendance which they have attracted in all of the cities in which they have so far been held shows the great interest of medical and hospital people in obtaining information on how they can best serve the nation to bring about a speedy victory.

150 Association Members Are in Active Service

The following members and former members of the Association have been reported to the Office of the Association as serving with the armed forces of the nation. The list, which contains the names of 150 physicians, includes their home addresses and addresses in the services when the latter addresses are known, and gives each physician's name by the county of his residence before he was called into service.

ALFALFA

DUNNINGTON, W. G., Cherokee, 189th F. A., Camp Barkeley, Abilene, Tex.

ATOKA

COTTON, W. W., Atoka———

BECKHAM

TRACY, G. W., Erick, 120th Med. Regt., Camp Barkeley.

BLAINE

CLARK, BEN P., Okeene———

COX, A. K., Watonga, Camp Bowie, Tex.

BRYAN

BAKER, A. T., Durant, Camp Barkeley.

COKER, B. B., Durant, 3449 Lover's Lane, Dallas, Tex.

DUEWALL, R. H., Durant, Camp Wolters, Tex.

PAUL, WM. G., Durant, 107 E. Artillery Post, Fort Sam Houston, Tex.

CADDO

ANDERSON, P. H., Anadarko, Dallas, Tex.

COOK, EDWARD T., JR., Anadarko, 368th Inf., Ft. Huachuca, Ariz.

MILES, JOHN B., Anadarko, Station Hospital, Camp Barkeley.

CANADIAN

CRADEN, PAUL, El Reno———

CARTER

CARLOCK, J. HOYLE, Ardmore, Fort Sam Houston, Tex.

PERRY, FRED T., Healdton, Camp Barkeley.

SMITH, JAMES, Ardmore, Wm. Beaumont General Hospital, El Paso, Tex.

STONE, S. N., Ardmore, Naval Hospital, San Diego, Cal.

CHOCTAW

WATERS, FLOYD L., Hugo, Camp Wolters, Mineral Wells, Tex.

CLEVELAND

BEELER, T. T., Norman, Fort Knox, Ky.

COOLEY, BEN., Norman, Fort Bliss, El Paso, Tex.

HOOD, J. O., Norman, 179th Infantry, Fort Sill.

WILLARD, D. G., Norman, Naval Hospital, San Diego, Cal.

COTTON

VAN MATRE, REBER M., Walters, San Antonio, Tex.

CREEK

MOTE, PAUL, Sapulpa, U. S. Receiving Station, San Diego, Cal.

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ZAMPETTI, H. A., Drumright, Fort Logan, Colo.

CUSTER

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HINSHAW, J. R., Butler———

KENNEDY, LOUIS, Clinton———

PAULSON, ALVIN W., Clinton, Randolph Field, Tex.

GARFIELD

BAKER, R. C., Enid, 189th F.A., Camp Barkeley.

BOND, IRA T., Enid, Special Troops, 45th Division, Camp Barkeley.

JACOBS, R. G., Enid, Naval Hospital, San Diego, Cal.

ROBERTS, C. J., Enid, Station Hospital, Camp Wolters, Mineral Wells, Tex.

ROSS, GEORGE, Enid———

GRADY

BAZE, ROY E., Chickasha———

OHL, C. W., Chickasha, 189th F. A., Camp Barkeley.

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HUGHES

DAVENPORT, JOHN, Holdenville, 1323 Fulton Ave., Fort Sam Houston, Tex.

JOHNSTON, L. A. S., Holdenville———

KERNEK, CLYDE, Holdenville———

JACKSON

ENSEY, J. E., Altus, 120th Quartermaster Regt., Fort Sill.

STARKEY, W. A., Altus, Camp Barkeley.

JOHNSTON

SCOTT, GEORGE W., Tishomingo, Station Hospital, Fort Sill.

KAY
KENNEDY, VIRGIL N., Newkirk———
MOHLER, E. C., Blackwell, 26th General Hospital, Fort Sill.
RISSER, PHILIP, Blackwell, Navy Hospital, San Diego, Cal.
LeFLORE
BRADLEY, FRANK, Talihina, Camp Wolters, Mineral Wells, Tex.
LOWREY R. W., Poteau, Fort Sam Houston, Tex.
ROGERS, G. A., Talihina, Weatherford, Tex.
LOGAN
RITZHAUPT, LOUIS H., Guthrie, State Selective Service Headquarters, Oklahoma City.
LOVE
LAWSON, PATRICK, Marietta, 179th Inf., Fort Sill.
MARSHALL
RAFF, J. G., Madill, 158th Infantry, Camp Barkeley.
MURRAY
FOWLER, ARTHUR, Sulphur, 158th F. A., Camp Barkeley.
PRATHER, FRANK W., Sulphur———
MUSKOGEE
ATKINS, PAUL N., JR., Muskogee, Station Hospital, Fort Sill.
DOYLE, W. H., Muskogee, 622 First Court, Clayton, Mo.
HOLCOMBE, R. N., Muskogee, 180th Infantry, Fort Sill.
KAISER, G. L., Muskogee, 180th Infantry, Camp Barkeley.
OGLESBEE, C. L., Muskogee, 180th Infantry, Fort Sill.
REYNOLDS, JOHN H., Muskogee, Station Hospital, Fort Sill.
WEAVER, W. N., Muskogee, 1804 Tenth Street, Brownwood, Tex.
WOLFE, I. C., Muskogee, 180th Infantry, Fort Sill.
OKFUSKEE
BLOSS, C. M., JR., Okemah, Camp Grant, Rockford, Ill.
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BAILEY, W. H., Oklahoma City, Station Hospital, Fort Sill.
BEATY, C. SAM, Oklahoma City, 320 Spafford Ave., San Antonio, Tex.
BOLEND, REX G., Oklahoma City, 45th Division, Fort Devens, Mass.
BRANHAM, D. W., Oklahoma City———
BROWN, GERSTER W., Oklahoma City, Naval Hospital, Charleston, S. C.
CLARK, JOHN V., Oklahoma City, Camp Barkeley.
COLEY, JOE H., Oklahoma City, Naval Hospital, San Diego, Cal.
DeVANNEY, LOUIS R., Oklahoma City, Marine Recruiting Station, Oklahoma City.
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FULTON, CLIFFORD C., Oklahoma City, U. S. Naval Hospital, Corpus Christi, Tex.
HAZEL, ONIS G., Oklahoma City———
HOLLINGSWORTH, C. EDWARD, Oklahoma City, Fort Richardson, Anchorage, Alaska.
HOWARD, ROBERT B., Oklahoma City, LaGarde General Hospital, New Orleans, La.
HUBBARD, RALPH W., Oklahoma City—(foreign service).
HYROOP GILBERT L., Oklahoma City, Los Angeles, Cal.
KURZNER, MEYER, Oklahoma City, Naval Air Station, San Diego, Cal.
LINDSTROM, W. C., Oklahoma City, 82nd Inf. Div., Camp Claiborne, La.
MARIL, JOSEPH J., Oklahoma City, Post Hospital, Fort Sill.
MARTIN, H. C., Oklahoma City, Station Hospital, Fort Sill.
McCLURE, WILLIAM C., Oklahoma City, Long Beach Naval Dispensary, Long Beach, Cal.
MELVIN, JAMES H., Oklahoma City, 1614 D Ave., Brownwood, Tex.
MILES, W. H., Oklahoma City, 120th Med. Regt., Camp Barkeley.
MILLER, NESBITT L., Oklahoma City, Camp Barkeley.
RECORDS, JOHN W., Oklahoma City, Fort Bliss, El Paso, Tex.
RICKS, J. R., Oklahoma City, Camp Chorrea, Balboa, Canal Zone.
SADLER, LeROY H., Oklahoma City, Camp Bowie, Brownwood, Tex.
SANGER, F. A., Oklahoma City, 120th Med. Regt., Camp Barkeley.
SANGER, W. W., Oklahoma City, Station Hospital, Fort Sill.
SEWELL, DAN R., Oklahoma City, Station Hospital, Army Air Base, Albuquerque, N. M.
SHORBE, HOWARD B., Oklahoma City, Station Hospital, Fort Sill.
SMITH, CHARLES A., Oklahoma City, Fort Huachuca, Ariz.
STRECKER, WM. E., Oklahoma City, Station Hospital, Camp Wolters, Mineral Wells, Tex.
TACKETT, O. H., Oklahoma City, Panama Canal Zone.
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PAYNE
DAVIDSON, W. N., Cushing, Station Hospital, Camp Barkeley.
PERRY, DANIEL L., Cushing, 120th Med. Regt., Camp Barkeley.
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WEBSTER, W. H., Ada, 120th Med. Regt., Camp Barkeley.
ROGERS
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ANDERSON, W. D., Claremore, Victoria, Tex.
BIGLER, E. E., Claremore, Station Hospital, Fort Sill.
NELSON, D. C., Claremore, Fitzsimmon, Denver, Colo.
SEMINOLE
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LYONS, D. J., Seminole, Camp Barkeley.
TERRY, JOHN B., Wewoka, Kelly Field, Tex.
STEPHENS
KING, E. C., Duncan, Australia.
SMITH, LESTER P., Marlow, 179th Infantry, Fort Sill.
TEXAS
BLUE, JOHNNY A., Guymon, Naval Recruiting Station, Oklahoma City.

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DENNY, E. RANKIN, Tulsa, La Garde General Hospital, New Orleans, La.
EWELL, W. C., Tulsa, Fort Sam Houston, Tex.
FORD, R. B., Tulsa, U. S. Naval Station, Corpus Christi, Tex.
HAMMOND, JAMES H., Tulsa, 120th Med. Regt., Camp Barkeley.
PITTMAN, COLE D., Tulsa, Chanute Field, Rantoul, Ill.
POLLOCK, SIMON, Tulsa, Camp Hulen, Tex.
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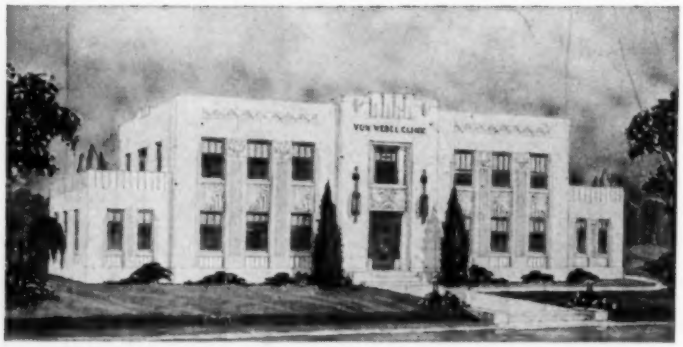

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NEWS FROM THE COUNTY SOCIETIES

A Farm Security Administration plan for Cherokee county was discussed by Dr. Charles M. Pearce, Dallas, Regional Medical Director, at the meeting of the Cherokee County Medical society, April 14, in Tahlequah. About 12 members were in attendance.

Dr. Isadore Dyer, Tahlequah, discussed important notes taken at the Second American Congress on Obstetrics and Gynecology.

The Cherokee county society will have as its guests at its May meeting a medical group from Tulsa, who will participate in the program of the meeting.

The Washington-Nowata County society has adjourned its meetings until the completion of the Postgraduate course in Internal Medicine being conducted in that section of the state by Dr. L. W. Hunt. The Washington-Nowata society plans to resume its meetings late in May.

A Symposium on Pneumonia highlighted the meeting of the Pittsburg County society, April 14, at the St. Mary's hospital in McAlester. Twenty members were present to participate in the discussion.

Dr. E. H. Shuller, chairman, read a short paper and discussions of diagnosis, medical management, surgical complications, differential diagnoses including multiple x-rays of pneumonias and allied conditions, were held by the doctors present.

A Symposium on Fractures will be the feature of the next meeting to be held May 28 in Antlers with members of the Southeastern Oklahoma Medical association. Dr. James S. Speed of the Willis Campbell clinic in Memphis, Tenn., will be the guest speaker for this meeting.

"Some Observations of a Medical Officer in the Philippine Islands" was the topic of the talk given by Dr. G. E. Johnson of Ardmore at the meeting of the Garvin County Medical society, April 15, in Pauls Valley.

An informal discussion of Doctor Johnson's talk was held by the 12 members in attendance, and the meeting was adjourned.

The next meeting will be held May 20 in Pauls Valley.

At the buffet dinner meeting of the Oklahoma County Medical association, April 28, in Oklahoma City, Dr. Joseph W. Kelso discussed "Repair of the Perineum."

About 145 members were present at the association's March meeting when Dr. F. Redding Hood and Dr. Henry H. Turner were speakers. Doctor Hood spoke on "Treatment of the Decompensated Heart," and Dr. Lou H. Charney and Dr. George H. Garrison led discussion on this talk. Doctor Turner gave a brief talk on Procurement and Assignment.

"The Present Status of Endocrinology in General Practice" was the subject of the talk given by Dr. Henry H. Turner of Oklahoma City at a meeting of the Muskogee County society, April 6, in Muskogee.

About 16 members of the society were present.

Dr. J. B. Morey, Dr. Forrest Dean and Dr. John A. Wrenn were speakers at the Pontotoc County society meeting, April 1, in Ada. Twelve members of the society were present.

Doctor Morey spoke on "Tularemia," and Doctor Dean on "Coronary Heart Disease." Doctor Wrenn reported on a recent meeting of the State Committee on Industrial and Traumatic Surgery.

Nine doctors and their wives were guests of the Woodward County Medical society at a meeting in Shattuck, April 9. About 18 members of the Woodward County society and their wives attended the meeting.

"Fractures" was the topic for discussion on the scientific program, and Dr. C. R. Rountree of Oklahoma City and Dr. Paul Dube of Shattuck were the speakers.

"Sulfonamides" is the topic for the program planned for the May 14 meeting of the society, with Dr. V. M. Rutherford as speaker.

Dr. Wann Langston of Oklahoma City and Dr. F. P. Baker of Talihina were guest speakers at a meeting of the Kay County Medical society, April 16, in Blackwell. Thirteen members of the society attended the meeting.

Following a discussion of the immunization program, Doctor Langston spoke on "Cardiac Emergencies," and Doctor Baker on "Pulmonary Tuberculosis, Diagnosis and Treatment."

Dr. Eugene A. Gillis of the State Health Department will be the society's chief speaker at a meeting, May 21, in Tonkawa, when he will discuss "Syphilis in All Its Phases." The society also is making plans for the District meeting to be held in June, at Ponca City.

Dr. Charles M. Pearce of Dallas presented a discussion of the FSA plan for medical care at the meeting of the Pottawatomie County society, April 18, in Shawnee. About 18 members were present.

"Tumors of the Uterus" was the topic of Dr. John Carson's talk on the scientific program for the evning.

Dr. Charles W. Haygood was appointed chairman for the P. T. A. Summer "Round-Up" of Pre-School Children.

New officers were elected at the meeting of the Stephens County Medical society, April 28, at the Wade hotel, in Duncan.

Dr. A. J. Weedn of Duncan was elected president, and the following other officers were elected to serve with him: Dr. E. H. Lindley, Duncan, Vice-President; Dr. W. K. Walker, Secretary-Treasurer; Dr. C. N. Talley, Marlow, delegate; Dr. J. L. Patterson, Duncan, alternate; and Dr. C. N. Talley, Marlow, and Dr. W. S. Ivy and Dr. S. S. Garrett, both of Duncan, censors.

Doctor Ivy and Doctor Patterson will serve on the Program committee, and Doctor Lindley, Doctor Talley and Doctor Patterson on the Tuberculosis committee. Those who will serve on the Cancer committee are Doctor Ivy, Dr. A. M. McMahan of Duncan, and Doctor Patterson.

Following the business session, two guest speakers from Oklahoma City presented a scientific program. Dr. B. F. Burton spoke on "Surgery of Melanotic Moles," and Dr. C. L. Brundage on "Skin Diseases (Dermatitis Contact)."

The Tri-County Medical Society, which is composed of members from the Caddo, Grady and Stephens County Medical societies met March 19, in Chickasha, with about 25 members attending the meeting.

Guest speakers were Dr. Wendell Long and Dr. Wann Langston, both of Oklahoma City. Doctor Long presented a paper on "Functional Uterine Bleeding," and Dr. Wann Langston presented a paper on "Cardiac Emergencies."

Dr. Finch Elected to College of Physicians

Dr. J. William Finch of Hobart has been elected a Fellow of the American College of Physicians.

Doctor Finch attended the Annual Meeting of the College at St. Paul, Minn., April 20-24, at which time he was inducted into the College.

Group Hospital Service News

Prepaid Hospital Care for Rural Areas

As though in answer to the Federal inference that voluntary hospitalization plans have not penetrated to all economic and vocational strata, Oklahoma's own Blue Cross Plan has just achieved signal success in rural enrollment.

Whether the population in and surrounding the city of Alva constitutes rural, or only semi-rural residents, does not make the recent campaign less noteworthy. The fact is, only one place of business has a sizeable payroll: 33 employees, of which perhaps only 17 work six days a week. A half-dozen other firms employ between 12 and 15 each.

As of March 15, 1942, Group Hospital Service more than doubled the number of Alva subscribers formerly enrolled. The names of approximately 750 Alva men, women, and children are now registered under the Blue Cross. The ineligibility of persons over 65 to enroll reduced the whole from which the Blue Cross drew its members.

Civic interest in the work of the non-profit plan devised a convenient method for payment of subscribers' monthly dues when the city council instructed the city clerk to post hospitalization dues on the water bill. This unique procedure is, to our knowledge, without precedent and may be the solution to the collection problem among rural groups in Oklahoma and elsewhere.

As a late payment of a water bill carries the penalty of discontinuation of supply, very few residents delay payment. It is presumed that the identification of "water" with "hospitalization" will effect the same promptness in Blue Cross payments.

The Alva General Hospital, city owned, helped materially during the campaign. Several new rooms have recently been made available. Front page publicity was given the drive by the Review-Courier, and the Blue Cross movie, "Worries Away," was shown four nights in local theatres without charge to the plan or the city. The beginning of the campaign was announced from many of Alva's church pulpits. Mr. Tom Greene, Regional Director, who co-ordinated the drive, spoke at the Rotary, Kiwanis, and Professional and Business Women's luncheons. Blue Cross posters were displayed around town and a special folder was distributed.

Backbone of the campaign was a staff of eight Alva women, who, after being instructed in the Plan, visited every residence (in districts), answering questions and accepting applications.

The importance of everyone of these forces of education and solicitation moves us to judge that without them, the Blue Cross Plan would have entered into "Individual enrollment" with its attendant poor selection.

To assure sound procedure, no applications were accepted after March 15, 1942, nor will they be accepted until that time next year.

No—the deterrent to voluntary hospitalization plans is not financial brackets, nor means of livelihood, nor geography. It is the *confusion* that exists in the minds of those who would choose prepaid care. On one hand is the non-profit plan; on the other, commercial insurance which in turn is broken down into perhaps three types and 15 underwriters.

Hospital care is as important to community health as police protection is to community welfare. Imagine the duplication, the fiasco, that would result, if eight distinct police organizations patrolled a community's streets!

We think we know which hospitalization system will best suit most people, and with more Alva-like cooperation from employers and municipalities the answer will be apparent to everyone.

Experience on the Alva procedure will be watched and studied carefully. If satisfactory in every way, the same plan will be offered to other communities that are interested. While the procedure used is experimental in some phases and not intended to be employed in all Oklahoma communities at once, it does have a bearing in determining future activity.

Pause at the familiar red cooler for ice-cold Coca-Cola. Its life, sparkle and delicious taste will give you the real meaning of *refreshment*.

BOOK REVIEWS

"The chief glory of every people arises from its authors."—Dr. Samuel Johnson.

"THE BLOOD BANK AND THE TECHNIQUE AND THERAPEUTICS OF TRANSFUSIONS." Kilduffe and DeBakey. The C. V. Mosby Company, St. Louis, Mo.

This book represents a clear and concise reference source for most problems relating to the important therapeutic procedure of transfusions.

It relates most interestingly the historical background of blood transfusion, relating its place as a therapeutic agent.

In discussing the rational indications and contraindications of blood transfusion, the book outlines and explains in detail the six fundamental physiologic principles which are essential in its consideration. These are: (1) increase in fluid bulk or volume of circulating blood, (2) immediate increase in the oxygen-carrying capacity of the blood, (3) increase in protein concentration of blood, (4) increase in the coagulability of the blood, (5) possible stimulation of hematopoiesis, and (6) addition of immunologic factors.

Under indications for blood transfusion the authors enumerate: (1) Hemorrhage, (2) peripheral circulatory failure, (3) pre-operative and post-operative therapy, (4) hypoprotonemia, (5) blood dyscrasias, (6) infections, (7) intoxications and poisonings, (8) debility.

The chapter dealing with the technique of blood typing and compatability tests is complete in detail, clear in description, and illustrated very graphically by cuts and photographs.

The blood bank, its operation, and changes which occur in stored blood, are explained in detail in four chapters with beautiful illustrations of technique.

Kilduffe and DeBakey devote several chapters to the transfusion of Plasma, both citrated and dried; the various methods employed to collect and administer plasma, the indications and techniques for its use. They made the statement that "the blood bank of the present may be in large measure replaced by the plasma bank of the future."

In view of the increasing interest in "blood banks," and plasma transfusions, and the important role that these therapeutic measures will play in Military Medicine this book is most timely, most interesting, and deserves a prominent place on the library shelf of most every physician.—Tom Lowry.

"INTRODUCTION TO DERMATOLOGY." Sutton and Sutton. Fourth Edition, cloth, $9.00. 904 pp., 723 illustrations. C. V. Mosby Company, St. Louis, Mo.

"Introduction to Dermatology," by Sutton and Sutton is the answer to the many requests from medical students and general practitioners for a more condensed edition of Sutton's "Diseases of the Skin" which has been so popular as an elaborate authority on dermatology for more than 20 years. Now the fourth revision of "Introduction to Dermatology" has appeared with numerous new and clear illustrations of various skin diseases, as well as many more pages of discussion of later thought originating largely from recent research and clinical experience. The addition of 35 pages of bibliography in the back of the book, which addition contributed so much to the popularity of the original Sutton's "Diseases of the Skin," has advanced this text into a class of its own.

This book discloses the same alertness and discrimination of the authors and publishers in their endeavor to give physicians and students the very best in the fewest pages, and should meet with the same gracious popularity as their previous editions.—Everett S. Lain.

"SURGERY OF THE AMBULATORY PATIENT." L. Kraeer Ferguson, A.B., M.D., F.A.C.S. 645 Illustrations. Philadelphia: J. B. Lippincott Company, 1942. $10.00. A Section on Fractures by Louis Kaplan, A.B., M.D., F.A.C.S.

From the inside front covers, which are occupied by illuminating instructive charts, to the index this book is filled with practical instructive items for the use of the young surgeon and the general practitioner; not the specialist. Therein lies its appeal. Finally, a book has been written and published which fills the great void which has heretofore existed between the medical school and the finished surgeon. For all this Dr. Ferguson and his collaborator Dr. Louis Kaplan, who has written the section on Fractures, will be thanked by the inarticulate thousands who have longed for just such a volume.

The book is very profusely illustrated with photographs and explanatory diagrams. It is divided into three sections: 1. Surgical Principles and Lesions, 2. Regional Surgery, and 3. The Musculoskeletal System. In the first section anesthesia, preparation for operation, post-operative care, infections and specific surgical lesions are discussed in considerable detail. In the second section, the various surgical lesions which might be classified as non-confining from the scalp to the foot are considered from the standpoint of region involved, anatomical considerations, etiology and most particularly treatment. The final section considers fractures and dislocations generally and then passes on to a consideration of the common fractures of both upper and lower extremities. Many reproductions of the X-ray films are included in the section with detailed explanation of the various maneuvers used in orthopedic treatment.

The book is large. It must be so since it is so comprehensive. It is also stoutly bound which again is essential since the binding will be greatly strained from frequent use in the hands of those for whom it is especially written.—L. J. Starry.

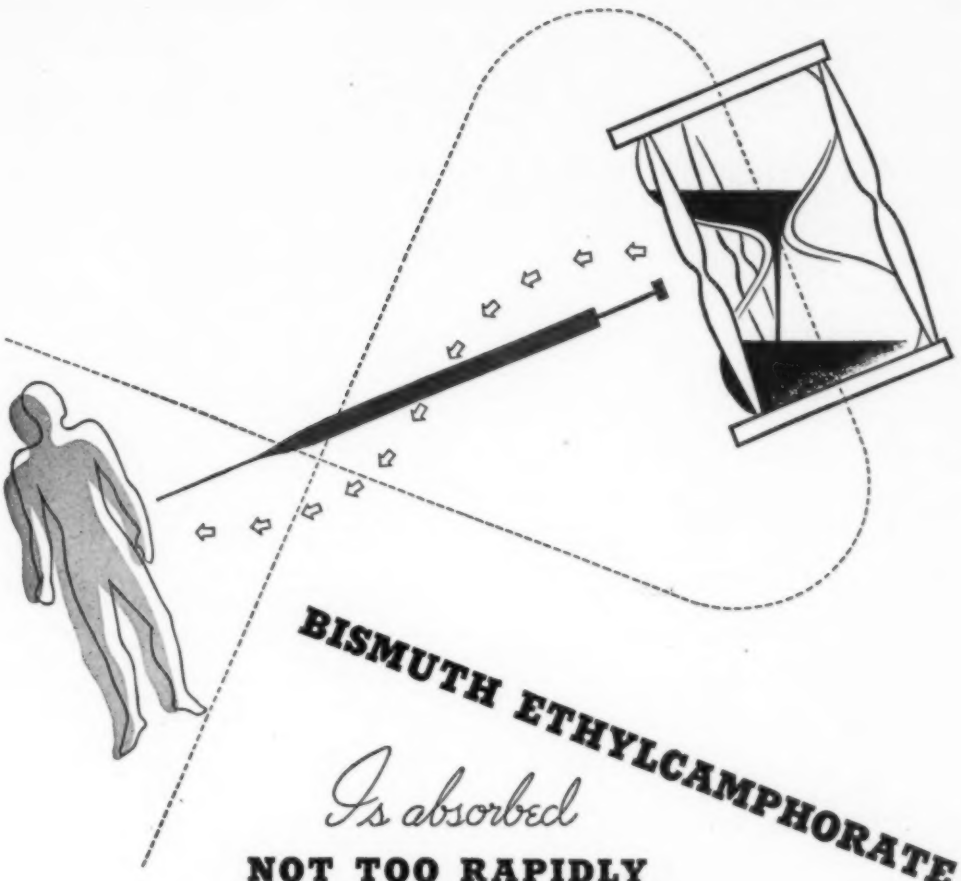
"EFFECTIVE LIVING." C. E. Turner, A.M., Sc.D., Dr. P.H., and Elizabeth McHose, B.S., M.A. C. V. Mosby Company, 1941.

It is difficult to discuss Effective Living in an effective way, but the authors of this book have presented many helpful facts in a clear-cut, straightforward manner, and it is to be hoped that they may reach many of the young people who are facing a new way of life with many difficult problems ahead.

In this volume, Effective Living is discussed under three main heads: "1. Effective Living for the Individual; 2. Effective Living in the Family; and 3. Effective Living in the Community." These are vital subjects which when properly understood, should help every youth reach his full capacity as an individual, as a unit in his family, and as a member of society. This is a high and holy purpose which should interest every good citizen.

The discussion proceeds in an orderly and interesting fashion. The text is supplemented by 164 attractive and instructive illustrations.

This is a book doctors may recommend to patients, to mothers and fathers, and to teachers and pupils. Each page is followed by a series of self-teaching questions and at the end of the text there is a page of source materials; also, Appendix A, which deals with the Control of Communicable Diseases, and Appendix B, which gives a plain and effective coordination. In addition, there is a glossary and a comprehensive Index.—L. J. Moorman.



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REVIEWS and CORRESPONDENCE

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments From
LeRoy Long Clinic
714 Medical Arts Building, Oklahoma City

"THE END RESULTS OF THE SIMPSON OPERATION IN SIXTY-ONE PATIENTS DELIVERED AT TERM." American Journal of Obstetrics and Gynecology, April 1942, Page 690. Brooke M. Anspach and John B. Montgomery, Philadelphia, Pa.

The authors emphasize the fact that retroflexion and retroversion of the uterus do not necessarily produce symptoms and that uterine suspension should be undertaken only after all other possibilities of origin of symptoms have been carefully explored.

On the other hand there are patients who have symptoms produced by a retroversion retroflexion of the uterus and require uterine suspension. "During the childbearing age, treatment of retroflexioversion of the uterus may be required: (a) to promote conception, (b) to favor the normal course of pregnancy, (c) to relieve various symptoms, the most frequent of which are low abdominal distress and backache, worse in the erect posture and upon exertion, better when lying down."

They discuss the natural requisite of a suspension operation during the reproductive years. It entails no disadvantage during a subsequent pregnancy and labor and the uterus must remain in good position.

It is felt that this requisite makes it desirable to use the inner parts of the round ligaments which are stronger, more muscular, and participate more in the involution of the uterus.

They consequently prefer in average patients the Simpson operation which has the advantage that the modified Gilliam operation is carried out extra-peritoneal. The operative technique is briefly discussed.

From 1921 to 1941 a total of 500 Simpson operations were performed. Fifty-eight of these patients were sterilized by ligation or excision of the tubes and of the remainder, many women used contraceptive measures and many were nearing the menopause.

There were 76 patients pregnant after the Simpson operation.

Fifty-six of these delivered at term by natural passages and five had Caesarean section at term for other indications than suspension. Abortion occurred in 11 patients. Two of these were induced.

"Bearing in mind the statement of Litzenberg, who reviewed the literature, that 'the proportion of one abortion to five viable births is supported by authorities from many countries,' we may conclude that the altered anatomic relations brought about by the operation did not predispose to abortion. On the contrary we have a definite number of patients in whom the performance of the Simpson operation after failure of postural and pessary treatment put an end to a repetition of abortion in early pregnancy."

Of the 61 patients delivered at term, 58 maintained a cure with the uterus in a normal position after delivery.

COMMENT: Most patients with retroversion and retroflexion of the uterus are suffering no symptoms from this condition and do not require an operation for its correction. The cause of symptoms can usually be found by a more careful and painstaking investigation and when any type of uterine suspension is undertaken in patients where such careful investigation does not precede operation, many patients will have the same symptoms which they had before.

However, there are selected patients who do require uterine suspension during the reproductive years and this paper is important because it deals with the effect of the uterine suspension upon pregnancy and also the effect of pregnancy upon the uterine suspension.

For the past 14 years I have employed the Simpson operation in the great majority of those patients upon whom I have performed a uterine suspension and I can unreservedly endorse the statement of these authors about the wisdom of employing the inner portions of the round ligaments and the very satisfactory results from operation.

I can also endorse the almost uniformly satisfactory results of patients who have delivered after operation.

It can likewise be said that this type of suspension does not interfere with the normal course of the pregnancy.

It may be added, in concurrence with the opinion of Doctors Anspach and Montgomery, that this type of suspension has never in my experience interfered with conception.

It is consequently to be recommended that patients who have been carefully selected for uterine suspension have a modified Gilliam type suspension. It is my preference to perform the Simpson operation because the round ligament is drawn through the extraperitoneal space entirely. The Crossen operation satisfies the criteria for the suspension but there is a potential opening in the side of the pelvis that has to be closed separately from the principal portion of the operation and it is for this reason that my preference lies in the Simpson operation.—Wendell Long.

"A COMPARATIVE STUDY OF TUBAL INSUFFLATION AND LIPIODOL INJECTION IN STERILITY." David Feiner, Brooklyn, N. Y. American Journal of Obstetrics and Gynecology, April 1942, Vol. 43, Page 639.

There is a very comprehensive study based on the results of investigation of tubal patency in 706 consecutive cases.

831 insufflations were given to 541 patients. There was one death with the pathological diagnosis "Rupture of a coronary vein, hemopericardium, pulmonary thrombosis, and chronic myocarditis."

Uterosalpingorrhaphy with lipiodol was performed on 337 patients. A total of 84 patients conceived tubal insufflation and a total of 58 patients conceived within one year following uterosalpingorrhaphy.

Six patients showed gross morbidity following uterosalingorrhaphy and there was one case of mortality from peritonitis.

There were 20 patients who showed patency to lipiodol visualization after a negative insufflation. It was thought that this was probably due to isthmospasm.

"The relative merits of carbon dioxide insufflation and lipiodol injection are considered. The view is expressed that carbon dioxide insufflation should always precede the use of lipiodol. However, lipiodol may be information in the majority of cases without some of

the drawbacks of lipiodol. The use of lipiodol should be reserved in the main for those cases of nonpatency in which accurate localization of the obstruction is desired.

"The therapeutic value of uterotubal insufflation is seen in many ways in cases of partial obstruction; a greater or more normal degree of patency may be established in certain cases showing a complete obstruction. Tubal patency may be re-established by the breaking down of adhesions, the expulsion of a plug of mucus or the straightening of the kinks. Dysmenorrhea is sometimes relieved; pregnancy follows insufflation in a certain proportion of cases.

"My personal experience and the review of literature indicates that routine lipiodol injections are not harmless and that as a diagnostic method lipiodol injections carry a morbidity and mortality even though small. In sterility cases in which one tube is occluded, or both tubes show partial obstruction as demonstrated by air insufflation, lipiodol injection should be used cautiously, as complete occlusion may result and thus defeat the primary objective."

COMMENT: Both of these procedures are now well established and of tremendous assistance in the investigation and correction of sterility.

There would seem little doubt but that most would agree that carbon dioxide insufflation should always precede the use of lipiodol. However, lipiodol may be very useful, particularly in those patients in which accurate localization of the obstruction is desired when some surgical interference is contemplated.—Wendell Long.

"CRITERIA OF AN ACCEPTABLE OPERATION FOR ULCER. The importance of the acid factor." Owen H. Wangensteen, M.D., and B. Lannin, M.D.: Archives of Surgery, March 1942. Page 489.

The authors believe that the empiric surgical approach to the ulcer problem has come to an end. In the past 50 years of accumulated experience a mass of conflicting data has accumulated with reference to the accomplishment of operation in the management of ulcers without a clearcut definition of the criteria of an acceptable operation. It now appears that the cause of this confusion is not difficult to detect. There having been no general agreement among clinicians or investigators concerning the cause of ulcer, the surgeon knew only that the objective of his craftmanship was to prevent recurrence of ulcers; in determining how to attain that end, he had little or no help to guide him. It was not surprising, therefore, that the surgeon groped about aimlessly for procedures which he hoped might accomplish his objectives of obviating recurrence of ulcer since he did not know how ulcer came about, what was demanded of a satisfactory operation, or how his handicraft mediated its influence.

The authors believe that all this has now changed. They think that accumulating evidence indicates clearly that acid is the important factor in the genesis of ulcer. They admit that it is not known what are the factors that condition the capacity of the gastric mechanism to secrete acid or what other factors may thwart or favor digestion of tissue by acid. However, they believe that unneutralized hydrochloric acid secreted by the stomach may bring about the formation of ulcer in every instance.

It has been found that, by stimulating the intrinsic gastric secretory mechanism with histamine in beeswax, from which histamine is liberated slowly, ulcer may be produced in a large number of laboratory and domestic animals.

In their series of patients, they report upon seven types of gastric operations and they recommend as satisfactory only two types of operations out of the total number of seven types.

It is their conviction that, in their hands, the following two kinds of operations alone are satisfactory.

(a) Three-quarter resection, including the pylorus and antrum with Hofmeister retrocolic anastomosis.

(b) Finsterer exclusion operation with excision of the remnant of the antral mucosa.

Their patients who have undergone the Three-quarter gastric resection may eat anything; the imposition of dietary restrictions is unnecessary. Within four months after operation, usually, the gastric capacity of the majority of these patients has returned to normal, so that they can eat a full sized holiday meal without distress. They point out that the thin walled fundus is the most dilatable portion of the stomach. Most of these patients hold their weight satisfactorily. A number gain weight. They have found no evidence of anemia or dietary deficiency in patients upon whom the Three-quarter gastric resection has been performed. They believe that inasmuch as Castle found that the fundus of the human stomach contains the intrinsic anti-anemic factor in abundance, it is not likely that anemia will follow such operation. They are uncertain as to whether such patients will need particular notice with regard to iron and calcium requirements in the future.

Their clinical experience suggests that the operative risk of the Three-quarter resection for ulcer is between two and three percent—a mortality rate no greater apparently than that reported by other investigators employing the small antral resection, or the operation of small gastric excision with Polya anastomosis.

In the surgical management of ulcer, it is to be remembered that the ulcer itself is not the disease but that it is only the end effect of unneutralized hydrochloric acid digesting away the wall of the stomach or the duodenum. It is the active gastric secretory mechanism which is responsible for the ulcer diathesis. Failure of operation to depress gastric secretion effectually compromises seriously the likelihood of the success of the procedure. There would appear to be some room for discriminating and effective choice among operations for ulcer, but there is little option between an acceptable operation and one which fails to meet the requirements of a satisfactory operation.

By far the most important criterion of an acceptable operation for ulcer is that it reduce gastric acidity effectually.

In their experience the two operations mentioned above (out of the total number of operations tried) appear to meet the requirements of a satisfactory operation.

Their objectives of an acceptable operation are, first, that it relieve the patient subjectively and remove the ulcer diathesis; second, that it prevent recurrent ulcer; third, that it do not compromise the future of the patient.

It appears that extensive removal of gastric tissue (Three-quarter resection) is necessary to insure achlorhydria and to give assurance of meeting the first two requirements of an acceptable operation. Their observation suggests that the achlorhydria of the Three-quarter resection so desirable to protect against recurrence of ulcer, meets adequately the third requirement of an acceptable operation, in that these patients lead active useful lives without any evidence of deficiency disorder.

The only known manner in which the secretion of acid may be depressed effectually is by sacrificing a liberal portion of the gastric mucosa.

In order to insure achlorhydria, excision of the antral mucosa is mandatory. They suggest that the antral mucosa may contain a harmonal stimulant of gastric secretion other than histamine.

COMMENT: Dr. Wangensteen's preference for Three-quarter resection is well known. In view of his unsatisfactory result with less radical operation, one is inclined to agree with him that Three-quarter resection is necessary to accomplish desired achlorhydria.

However there are other well known surgeons who are not yet convinced of the absolute necessity for Three-quarter resection.—LeRoy D. Long.

"WAR SURGERY AND TRAUMATIC LESIONS."

This excellent symposium includes three papers of importance with the following titles:

1. Early Diagnosis of Craniocerebral Injuries
2. Stab Wounds of Chest Wall and Lungs
3. Diagnosis in Abdominal Trauma

The symposium appears in April 1942 issue of the American Journal of Surgery. Early Diagnosis of Craniocerebral Injury: Donald Monroe, M.D., American Journal of Surgery, April 1942, Page 3.

An appreciation of diagnostic fundamentals is of more than usual importance in dealing with head injuries. "Brain surgeons" who have been trained in the more leisurely schools of neurology and tumor neurology are frequently at a loss in the hurly-burly of craniocerebral injuries in which decisions have to be made rapidly and without benefit of the detailed meticulous study that tradition has decreed must precede the diagnosis of intracranial disease. Moreover, the clouding of the picture by associated injuries, rapid intracerebral changes that may not only vitiate otherwise reliable signs but actually apparently reverse their significance, and the complications such as surgical shock and dehydration lead to profound diagnostic errors, ill-conceived therapy and higher mortality. There is a great need for sanity and objectivity in the diagnosing of the intracranial pathological conditions that result from acute craniocerebral injury.

A prerequisite of any acute craniocerebral injury, except perforating wounds of the skull, is the demonstration of the fact that there has actually been an injury to the patient's head and that he has been knocked unconscious as the direct result of that injury.

Accurate diagnoses of uncomplicated non-operable craniocerebral injuries are dependent, first, upon the history and then upon a study of the make-up and pressure of the cerebrospinal fluid. Diagnoses made without these data are inferential rather than factual.

Accurate diagnoses of uncomplicated, operable craniocerebral injuries will always include a word picture of the associated non-operable cerebral condition. In addition, certain data that are obtainable only by special x-ray examination, palpation through a scalp wound, a detailed history of the development of symptoms after the accident, and the use of an exploratory trephination whenever the patient's progress does not coincide with the diagnosis already made, are necessary.

More attention should be paid to the possibility of significant complications of acute craniocerebral injury. This is particularly true in regard to surgical shock, toxic-dehydration and acidosis.

Accurate diagnoses of common complications of acute craniocerebral injury will depend upon the knowledge of the cerebral pathological condition that has been produced by the head injury, a study of the pulse pressure, a study of the patient's history in relation to exposure to heat, fluid intake and limitation, the administration of dehydrants and the level of the intracranial pressure.

"STAB WOUNDS OF THE CHEST WALL AND LUNGS." Alex Steward, M.D., American Journal of Surgery, April 1942, Page 15.

No class of wounds, unless it be in a few centers of the brain, involves the essential physiologic processes of the body more rapidly than wounds of the chest. In addition to the rapid physiological changes which must be met, many pathologic sequellae may be expected. No class of wounds requires more accurate judgment at onset or more persistent care during its course.

Injuries and wounds of the chest have been classified in various ways. Lilienthal divides them into superficial, penetrating and perforating, the last two classes being differentiated only by degree. Cole divides them into external and internal chest injuries. Bigger calls them perforating and non-perforating. A similarly explicit description may be made of superficial wounds which involve layers of the thoracic wall to the parietal pleura, and deep wounds which extend through the parietal pleura to varying depths.

Peculiarly, verw few bayonet wounds of the chest were seen in the hospitals during World War I. The reasons given for this are: first, that the wounds were so severe that the victim failed to survive the trip, second, that the armies were taught to lunge for the abdomen so that the bayonet would not be caught in the ribs and, third, in case the bayonet was difficult to withdraw, to shoot it loose.

CONCLUSIONS: 1. Care must be taken in examining and repairing superficial chest wounds.

2. The immediate closure of deep chest wounds should be done and aspiration or valve control or internal pressure should be used.

3. The mistaking of systemic shock for right heart embarrassment and the danger in using intravenous solutions in the presence of increased intrapleural pressure is emphasized.

4. There is a difference in treatment and results of wounds involving the pulmonary and those involving the bronchial vessels.

"DIAGNOSIS IN ABDOMINAL TRAUMA." Ambrose H. Storck, M.D., American Journal of Surgery, April 1942. Page 21.

When a traumatic lesion of the abdomen, due either to penetration or blunt violence, is suspected or known to exist, diagnosis embraces more than the mere determination of whether peritoneal perforation has occurred, and even more than estimation of the probable existence and extent of visceral injury. Upon a complete determination of the patient's status in respect to shock, hemorrhage, and associated injuries, depend both the selection and the timing of the therapeutic measures which are discussed. In addition to immediate or preoperative studies, observations at the time of operation, and recognition of the late complications which follow traumatic lesions of the abdomen, are still other important phases of diagnosis.

An account of the circumstances under which the injury was incurred, as well as a description of the mechanism of the injury, often furnish valuable information. For example, in considering the possible damage done by a blunt force or by a projectile following a known course, if the urinary bladder was recently emptied it may escape injury; while if distended at the time the wound was sustained, the bladder may not only have been struck but is likely to have been extensively lacerated as a result of the explosive force exerted by its noncompressible fluid contents. Likewise, evacuation of the bowel shortly before injury favorably influences the amount of spillage of intestinal contents. The physical attitude of the patient when wounded may greatly influence the course of a projectile, and in the instance of subcutaneous wounds, the type and direction of the blunt force often suggests the probable location of visceral lesions. Information concerning the period of time elapsed since the injury was sustained, and the character of first aid or other previous treatment is also of value in planning the management of patients with abdominal injuries.

Prompt determination of the existence of abdominal visceral injury, extensive hemorrhage, shock, or associated chest as well as craniocerebral injury is especially necessary when patients are to be transferred in airplanes flying at high altitudes. Lovelace has reported on the deleterious effects caused by reducing atmospheric pressure in the presence of any of these conditions, and has also drawn attention to the increased outpouring of stomach and intestinal contents caused by expansion of gas in these viscera when atmospheric pressure is lowered. Therefore, only those ambulance air transports which have cabins that can be sealed to permit maintenance

of barometric pressure near that at ground level are safe conveyances for seriously wounded patients.

Even in obscure cases with either penetrating wounds or visceral injuries caused by blunt force, diagnosis is usually possible before shock and hemorrhage, or extravasation of gastro-intestinal content, have been fatally prolonged or extended.

The clinical manifestations as well as the findings obtained by clinical laboratory, x-ray and endoscopic methods of study, which permit early diagnosis and serve as a guide to therapy, are presented.

The indications for and method for exploring the abdominal wall wound as well as peritoneal cavity, are detailed.

Criteria for the selection of cases requiring operative treatment, and for the timing for surgical intervention, are given.

Methods of determining the presence and extent of hidden lesions at the time of operation, are discussed. The complications which frequently follow abdominal injuries are considered in respect to the importance of their early recognition.—LeRoy D. Long, M.D.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M. D.
911 Medical Arts Building, Tulsa

"USE OF NONSPECIFIC BACTERIAL VACCINE IN CHRONIC COUGHS AND THE COMMON COLD OF CHILDREN." H. Goldstein. Archives of Pediatrics. vol. 59. p. 50-56. January. 1942.

The cause of the common cold is believed to be a filtrable virus, and, as far as known, there is no specific available. Various polyvalent catarrhal and cold vaccines of stock bacterial combinations are being used with varying results. These are being used with the hope that secondary invaders may be prevented from causing infections of a serious nature of the nose, throat and respiratory tract. Some of the vaccines are effective to a partial extent; others not at all.

The author used many stock vaccines with unreliable effect. Some would act better than others in certain patients. In a number of children the commonly used cold vaccines failed to work, whether given during an attack of a common cold in order to abort or benefit it, or before one gets a cold in order to prevent it.

This lack of having any specific vaccine or other means of therapy to apply for relief of the suffering patients during attacks of common cold and chronic coughs led the author to seek a remedy for them to ameliorate their attacks. After several clinical trials, he found that bacterial vaccine of B.tyhposus containing 1,000 million organisms per cc achieved startling results.

The new method of vaccine therapy was used on 380 children, who have been suffering either from distressing coughs or repeated attacks of acute common cold. Many of them had a muco-purulent discharge in the nasopharynx, an angry red granular appearing pharyngeal wall, enlarged lingual tonsil, and running nose. Some complained of a clogged feeling in the nose and head, and a few gave a history of having sinus congestion and defective nasal breathing. Several of them showed bronchitis and rarely wheezing.

The dosage of B.typhosus vaccine was as follows: initial dose of 0.1 cc, two days later 0.2 cc intradermally, then subcutaneous injections were given every third day increasing in dose by 0.1 cc until 0.5 cc were given. In some instances the optimum dose reached was 0.7 cc to 1.0 cc depending on the local and general reactions of the child. Most of the children were relieved from their coughing spells after the first or second injection, and the coughing stopped after the third or fourth treatment. In children who came down with an acute head cold the first or the second injection brought complete relief. In a number of the children, prophylactic intradermal injections of 0.2 cc every two or three months for a period of one to two years prevented further attacks of colds.

It seems that this treatment changes the vulnerability of the upper respiratory tract and its mucous membrane, making it more resistant to the existing infection, and preventing the progress of the attack of colds. All in all, complete relief was brought to 90 percent of the children.

The B.typhosus vaccine has nonspecific antigenic properties also, which stimulate antibody formation, such as opsonins or similar substances, having certain effects that weaken or prepare the bacteria, making them attractive for phagocytic activity.

The author found that the smaller doses gave the best therapeutic results. In one instance a child of three years was coughing for over a period of several months. He had a congested nasopharynx, and rough breathing sounds. 0.1 cc B.typhosus vaccine was injected parenterally, and three days later 0.2 cc vaccine was additionally given. Since then, the child has been well and free from cough and nasopharyngeal infection. Such phenomenal results have been observed in the great majority of the cases treated.

"THE BLOCKED EAR OF THE CAISSON WORKER." A. Almour. Laryngoscope. vol. 52. p. 75-81. January 1942.

The "blocked ear" is an expression used by the caisson worker, or sandhog, to denote some disturbance to the drum, tympanic cavity, or both, which has resulted from a failure to equalize the intra- and extratympanic air pressure. This can occur during compression or decompression. The most important predisposing factor of blocking the ear is some degree of tubal occlusion, and the majority of blocked ears occur in workers who do not stay away from their work during an attack of common cold, or who still did not recover from an attack of cold.

The caisson worker, upon being locked in the compression apparatus is able to equalize at all times the pressure of the air in the middle ear with the changing pressure in the air lock. He is taught to do this by learning how to inflate his middle ears by swallowing repeatedly while he is in the lock. Where, however, a tubal obstruction is present, the ability to auto-inflate is lost.

The immediate symptoms of blocked ear is severe, stabbing pain in the affected ear and a sensation of extreme fullness. Speech is heard with no difficulty, but sounds hollow and muffled. Otoscopic examination enables one to classify cases; the second degree cases may be further subdivided into mild, moderate and severe forms.

In the first degree of blocked ear there is a marked retraction of the drum, with hyperemia of its blood vessels. The upper portion of the drum is hyperemic chiefly, while the lower half of the pars tensa of the drum approximates the normal color. Otalgia disappears quickly.

In the mild forms of second degree blocked ear, one or more hemorrhages are found in the tympanic membrane. They appear as purplish spots. A solitary hemorrhage is chiefly in the posterosuperior quadrant. The hemorrhages do not form bullae, and can never be confused with the hemorrhagic blebs of a grippe otitis.

In the moderate form of second degree blocked ear, one finds an intratympanic hemorrhage, with or without hemorrhage into the drum itself. The tympanis membrane is retracted and the bony landmarks accentuated, and it presents a diffuse purplish color. In the severe form, it is possible to visualize the incudostapedial articulation. The pressure of this joint against the membrane may result in a perforation. Such perforations may occur anywhere, and they may be of any size and number. The posterosuperior quadrant is affected

most often. Free bleeding may or may not accompany this type of blocked ear. Thus, bleeding from the ear is not an evidence of an injury to the internal ear.

In the vast majority of cases of blocked ear wherein no perforation has occurred the hearing returns to within normal limits after measures have been instituted to re-establish the patency of the Eustachian tube. Heat, in the form of diathermy, has aided in hastening the absorption of hemorrhages. The average time for accomplishing this has been 16 days. Where a perforation of the drum has occurred, the hearing loss may be anything from a few decibels to 30 decibels.

There may be some difficulty in evaluating the permanent disability of caisson workers due to blocked ear. There is no definite characteristic of a hearing loss due to a blocked ear. There is no pre-employment examination; moreover, there is no reliable audiometer on the market to test hearing acuity in a standardized form.

"EXOPHTHALMOS." A. D. Ruedemann. The Annals of Otology, Rhinology & Laryngology, vol. 50, p. 1164-1171, December 1941.

The patient with a protruding eye always presents a difficult problem for the diagnostician. There are usually several possible diagnoses, and the final decision as to the nature of affection can be made only after an operation on the orbit.

Exophthalmos is either bilateral or unilateral. The bilateral type is limited to general disease. The unilateral type is the one which causes the trouble. Congenital orbital defects and congenital eyeball defects must be differentiated. One orbit may be shallowed out and the globe pushed forward.

Cases of exophthalmos due to trauma are now seen more frequently. The history and roentgen examination will reveal the change in the size of the orbit. Protrusion of the eye may be produced either by compression of the orbital cavity by extraorbital lesions, or the orbital content may be increased by local tissue reaction or by new growth.

It is important to remember that the orbit is completely occupied at all times by the eyeball, muscles, fat, nerves, vessels, blood volume, and a certain amount of lymph. The eyeball cannot be pushed back into the orbit; the only direction the eyeball can go is forward. A considerable amount of new orbital tissue is required to move the eyeball forward one millimeter. The volume increase of the orbit must be about 1,600 cubic millimeter in order to push the eyeball outwards by one millimeter. This must be borne in mind when dealing with orbital tumors or lesions, as physicians are frequently surprised by the size of the abscess or the size of the local growth in the presence of only a small amount of exophthalmus.

Intracranial lesion itself does not, as a rule, change the position of the eyeball except in very rare cases. When changes in the position of the eyeball do occur with increased intracranial pressure, the diagnosis is so obvious that differentiation is not necessary.

In children, certain sinuses are absent up to seven and eight years of age. Therefore, unilateral exophthalmos is rarely due to sinus disease in a child. Exophthalmos in children should be divided into two groups: (1) the inflammatory group, and (2) the non-inflammatory group. If it is inflammatory, the sinuses must be excluded immediately or the possibility of an orbital cellulitis or abscess secondary to some general condition. Any precious constitutional disease may produce or lead to an orbital abscess. Yet, surgical measures to aid in diagnosis should not be undertaken unless all other measures have been tried.

An inflamed prominent eye in a young child always leads to some trouble posterior to the eye, but does not always mean that the orbit must be entered in order to make a diagnosis or give treatment. This is especially true in the cases of orbital edema with some stasis of the blood due to involvement of the ethmoid or the antrum in which poor drainage from the nose is present. In these cases, especially if a diagnosis of sinus disease could be made, the patient should be put to bed and given supportive measures, such as frequent applications of heat to the face, drops to the nose, and suction to establish drainage through the nose. The eyeball will go back into position without the disfiguring scar from an orbital operation.

In the noninflammatory groups in children, an intermittent exophthalmos may be present due to a vascular tumor of the orbit, to encephalocele, dermoid cysts, or occasional sarcoma. Every possible diagnostic point must be investigated in order to determine the etiological factor in unilateral exophthalmos.

The position of the eyes aids in the differential diagnosis. Lesions invading the orbit from without or surrounding areas, usually push the eyeball into position opposite to the invaded area. This is not always exactly correct, however.

Unilateral exophthalmos occurring in adults requires considerable study before a definite diagnosis can be established. Spontaneous exophthalmos may follow a strong sneeze if there is a dehiscence of the orbital wall on the nasal side. This is a type of emphysema, and one may feel the air moving under the palpating finger. A light blow upon the orbit may produce sufficient injury to the nasal bony wall of the orbit to cause such a dehiscence.

Sudden exophthalmos may follow the washing out of the maxillary sinus under pressure. This is not a serious accident, unless pus is pushed into the orbit.

It is important to remember that acute and noninflammatory orbital edema is associated with angioneurotic edema and other allergic factors, and also is associated with the early stages of trichinosis. New growths appearing in the orbit of an adult may be inflammatory or noninflammatory. The sarcomas are usually noninflammatory and usually come down into the orbit from above or occur in at least 75 percent in the superior half of the orbit.

Most metastases in the orbit have been secondary to carcinoma, these arising elsewhere in the body. Orbital carcinoma are usually infiltrating new growth, produce pain, are inflammatory, and tend to early fixation of the eyeball. They usually come from the antrum or the nasal side of the orbit, and are unilateral as a rule.

Cases of pulsating exophthalmos are not rare. The history is not always definite and the expected bruit is not always present. It may be transitory, both to the patient and to the examiner. Until the automobile era, most cases of pulsating exophthalmos were secondary to spontaneous rupture of a vessel within the orbit, trauma playing a very minor role. The cases now are usually traumatic in origin, being due to automobile injuries. Every case of exophthalmos should be listened to with a stethoscope for a diagnostic bruit.

Pseudotumors of the orbit in adults are not uncommon, arising usually from a posterior ethmoidal cell. The entire orbit is invaded by low grade granulation tissue which usually is painful, inflamed and insidious in growth.

Panophthalmia is another inflammatory process occurring in the orbit. It arises from the anterior portion of the socket and is usually so obvious that diagnosis is immediate. All in all, the diagnosis of exophthalmos is made by exclusion only. It requires painstaking study in every instance, and examination of the nose and throat is always necessary in a patient with a protruding eye. Roentgenograms are of great help but are not to be relied upon entirely.

"TRACHEOBRONCHIAL VARICES AND HEMORRHAGIC TRACHEOBRONCHITIS; ITS ENDOSCOPIC RECOGNITION." J. M. Remolar, and L. A. Samengo. Archivos argentinos de enfermedades del aparato respiratorio y tuberculosis, vol. 9, p. 312-319, November 1941.

Formerly, bronchoscopic examination was restricted to a few indications, and the use of the bronchoscope was thought to be an instance of malpractice in cases of hemoptysis. Now, recurrent hemoptysis is one of the chief indications for bronchoscopic examination. It is the only means to detect the primary source of bronchial bleeding, whether the blood originates from tumors, varices, ulcers or hemorrhagic inflammations.

Varices in the tracheobronchial tree are rather frequent according to the published medical literature, but they are often mistaken for tuberculosis, or bronchial dilatation or for other sources of hemorrhage. Their pathogenesis and etiology is unknown, since there have been no biopsies and no autopsies made in such cases. It is told that such varices show the lability of the venous system, which itself is a non-committal statement.

One should distinguish isolated tracheobronchial varices, varices resulting from general systemic disease, and hemorrhagic tracheitis. Tracheobronchial varices may occur in liver cirrhosis, leukemia, hemophilia, purpura, severe jaundice, etc. They may also develop in chronic industrial poisoning, in workers who are exposed to irritating gases, war gases, or to lead and arsenic. Cases of hemorrhagic tracheobronchitis are mostly due to infection. Syphilis has also been incriminated as a factor in producing tracheobronchial manifestations with hemorrhage. Of course, tuberculosis is the most frequent cause of hemorrhagic tracheobronchitis. Rosenthal proved that the Pfeiffer bacillus may also provoke acute tracheobronchial inflammations with bleeding.

The clinical picture is characterized by bloody sputum without exact pulmonary signs, discrete retrosternal pain, and general malaise. The clinical course is favorable and spontaneous healing will occur within from ten to 15 days. This is true for most cases of grippe tracheobronchitis.

Another factor in bronchial bleeding is bronchomycosis and bronchospirochaetosis. The latter is caused by Castellani's spirochaete, and is manifested in the form of chronic tracheitis. Recently, Collet stated that deficiency of vitamin C may also be a predisposing factor in the pathogenesis of varices or hemorrhagic tracheitis. In the present author's clinical material the lack of vitamin C proved to be of importance in the maintenance of hemoptysis, and administration of this vitamin was an excellent adjuvant.

The endoscopic exploration of the tracheobronchial tree is the only procedure that may ascertain a correct diagnosis. The bronchoscopic aspect varies. One may find a few varices, which are mostly on the posterior wall of the trachea over or below the glottis. Or, there may be diffuse lesions over a red, congested mucosa, of different color and size; this is the more common type of varicous lesions. In hemorrhagic tracheobroncitis there is intensive hyperemia of the mucous membrane with numerous small and large varicosities; the mucosa is covered with pseudomembranes and blood coagula.

The only available and successful treatment of these conditions is by means of the bronchoscope. The varices are cauterized with 10 percent of silver nitrate. Lesions in the second stage can still be cured easily, but in more advanced cases repeated bronchoscopic treatment will be needed. In general, one or two treatments are sufficient for the cure of tracheobronchial varices.

CARDIOLOGY

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"TREATMENT OF CONGESTIVE HEART FAILURE."

In a lecture before the New York Academy of Medicine, Paul D. White (Bull. New York Acad. Med. 18:18, 1942) presents some pertinent remarks concerning treatment of congestive failure.

"Digitalis, in any one of numerous effective forms, still remains the drug par excellence for myocardial failure, no matter what the heart rhythm," says White, "although the results are more spectacular in the presence of auricular fibrillation with rapid heart rate."

One should be certain that dyspnea or edema is of cardiac origin and not a result of pulmonary disease or local stasis before digitalis is administered. Nor is digitalis of value when congestion is the result of chronic constrictive pericarditis unless auricular fibrillation has occurred as a complication to speed up the heart rate, in which circumstance it does help a lot.

It is important to avoid giving digitalis in doses sufficient to upset the patient inasmuch as the drug will probably be needed during the rest of his life and should not be made excessively distasteful. White points out that so-called sensitiveness or idiosyncrasy to digitalis is usually a result of physical or mental repugnance to previous toxic dosage. He states that he has never encountered an instance of true allergy to digitalis.

Three other observations concerning digitalis should be emphasized. The first concerns occasional drug intoxication immediately following vigorous mercurial diuresis, which may be wrongly attributed to the diuretic. In these patients, a good deal of digitalis as well as water may be released suddenly from the tissues and produce a toxic saturation of digitalis.

The second point concerns the different strengths of digitalis preparations. Many have been increased in strength to accord with the international standard of the U. S. Pharmacopia. Others have retained their old strength on which most physicians have based routine digitalis dosage for years.

White states: "Since the new potency is from 30 to 50 percent stronger than the old, it behooves us always carefully to note the statements on the labels of the preparations we are using to avoid the possibility of disagreeable or even dangerous digitalis intoxication which I have found to have become, quite abruptly, increasingly frequent throughout the country in the last few years because of the general lack of appreciation of this important fact."

The third point "concerns the use of digitalis in modest dosage, say at the rate of one or one-half the usual daily ration without digitalization first, in cases of considerable myocardial strain and enlargement before the muscle fails, in order to prevent congestive failure. Dr. Henry Christian advised this some years ago and I believe it is a wise move, despite the difficulty of proof of its efficiency."

Mercurials given intravenously have assumed an important and useful role as diuretics in congestive failure, but there is some neglect of milder diuretics that may be taken by mouth and suffice as adjuvants to rest and digitalis.

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ORTHOPAEDIC SURGERY

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"MUSCLE BEHAVIOR FOLLOWING INFANTILE PARALYSIS." Herbert E. Hipps. The American Journal of Surgery. LIII. 314. 1941.

The author reports a study of a series of cases of infantile paralysis in which he attempted to determine whether or not a paralyzed muscle tries to recover when placed at rest in a relaxed position. He did not use transplanted muscles in the study or muscles which were hard to demonstrate, such as the quadratus lumborum. The only patients used were those receiving physiotherapy and brace treatment, or rest and braces. The grading system used was as follows: zero, trace, poor, fair, good, normal.

The results in the three age groups studied were:

(1) Six months to six years—37.3 percent improvement;
(2) Six years to 15 years—44.7 percent improvement;
(3) Sixteen years and over—27.3 percent improvement.

Two hundred and eighty-seven muscles, graded poor plus, fair, or good, showed much improvement in 87 percent of the cases; 276 muscles graded zero, trace, or poor showed slight or no improvement in 90 percent.

Thus, he concludes that muscles which have been paralyzed a long time, and grade only zero to trace or poor, will not benefit by prolonged rest or physiotherapy, while those which grade poor plus, fair, or good can be expected to improve with physiotherapy.

He makes the unanalyzed statement that 25 miscellaneous patients who received adequate treatment made an average improvement of 47.5 percent; 21 patients who received inadequate treatment made an average improvement of 20.6 percent.

Twenty-three cases were studied to determine the relative efficiency of early treatment, beginning immediately after the temperature subsided, with the following results:

(1) Early complete rest with splinting—23.8 percent.
(2) Early physiotherapy—68.5 percent.
(3) No treatment(small number of patients)—31.1 percent.

"END RESULTS OF SYNOVECTOMY OF THE KNEE JOINT." Ralph K. Ghormley and David M. Cameron. The Amer. Jr. of Surg. LIII. 455. 1941.

The authors review Swett's original paper in which were stated the three theoretical considerations on which to base operation for this condition.

1. With foci removed, the inflammatory process in the joints subsiding, and the usual means of absorption of the inflammatory exudate having failed, manual removal of the exudate might promote the resumption of joint function.
2. Such operations might be helpful, not alone by the mechanical improvement, but by removal of organisms capable of continuing the process.
3. Stimulation of metabolism, by prompt restoration of function in atrophic disused joints and muscles, might occur.

The authors state that synovectomy may be employed in a joint in which extensive induration and fibrosis of the capsule, enlargement of the synovial villi, and persistent increase of joint fluid are present. The causes of such conditions may be as follows: chronic atrophic arthritis, traumatic arthritis, benign tumors, osteochondromatosis, syphilitic arthritis, intermittent hydrarthrosis, synovitis ossificans, hypertrophic arthritis, synovial tuberculosis, synovitis caused by a foreign body.

Their results indicate that synovectomy is most useful in traumatic arthritis, synovial osteochondromatosis, and xanthoma or benign tumors. It is of less value, although indicated, in some cases of chronic infectious arthritis. It is of value in chronic synovitis, but the prognosis should be guarded; this holds true also in intermittent hydrarthrosis.

"FRESH COMPOUND FRACTURES. TREATMENT BY SULFONAMIDES AND BY INTERNAL FIXATION IN SELECTED CASES." Willis C. Campbell and Hugh Smith. Jr. A.M.A. CXVII. 672. 1941.

The authors' report is based on three years of experience in this method of treatment, and includes a series of 50 private patients treated under optimum surgical conditions, with adequate postoperative care and follow-up, and 93 patients of the municipal hospital treated under less favorable conditions. Sulfonamides were used in the entire series; metallic, internal fixation in 42 of the cases; and primary closure of wounds in the majority. No set routine was followed for all compound fractures, but in general the treatment consisted in adequate debridement, copious irrigation with normal saline, and implantation of five to 20 grams of sulfanilamide crystals in the wound, metallic fixation when indicated—using vitallium stainless steel—followed by primary closure in all cases except those of more than 12 hours' duration, those with soft tissues so extensively mangled that closure of the skin was impossible, or those in which complete debridement was impossible, as in shotgun wounds of a fleshy part.

In comparing this entire group with a group of 75 compound fractures in which neither internal fixation nor the sulfonamides were used, it was found that the percentage of union and non-union, and the average time required for union in the two groups, was approximately the same.

Primary closure, in conjunction with sulfonamide therapy, did not increase the incidence of gas gangrene, nor was there a sufficiently striking decrease in its incidence to indicate a particularly beneficial effect of the sulfonamides on the gas-producing organism. The incidence of infection was reduced from 33.3 to 18.1 percent; only two of 143 patients wro received sulfonamide died from infection, as compared with three in the control series.

In a comparison of the 40 patients in whom internal fixation was used, with the 52 in whom no internal fixation was used, it was found that there were 14 infections and 11 non-unions in the former group, and 11 infections with three non-unions in the latter. There was little difference in the average period required for union between those with and those without internal fixation. The high incidence of infection and non-union in the group with internal fixation, is partially explained by the fact that it was used in those with severe fractures in whom a higher percentage of infection and non-union could be expected. The authors feel that their results have been materially improved by these measures, and do not hesitate to use internal fixations when indicated.

"CALCIUM DEPOSITS IN THE SHOULDER AND SUBACROMIAL BURSITIS." A Survey of 12,122 Shoulders Boardman Marsh Bosworth. The Jr. of A.M.A. CXVI. 2477. 1941.

The author examined, clinically and by roentgenograms, the shoulders of 6,061 unselected persons, and found 165, or 2.7 percent, of the group had calcium deposits about the shoulder. Of the total group, 5,061 were followed over a three-year period. During this time 70 patients had symptoms of pain in the shoulder. The cases appeared more frequently in males below the age of 50, and especially in patients whose work required long periods of use of the arms in abduction. The author feels that there is a definite occupational factor in the formation of these deposits. A few deposits were found to occur in as short a time as two months, but it was felt that the majority developed slowly over a number of months.

In diagnosing these cases, the author advocates the use of a fluoroscopic and spot-film roentgenographic technique to prevent the overlooking of otherwise obscure calcium deposits.

In treating these cases, it must be remembered that some will heal spontaneously. Others may be improved or cured by such means as heat (infra-red diathermy) or irrigation methods. The author, however, prefers surgical excision of the deposits as being the surest means of complete relief. After such a procedure, the patient may expect to return to work, without symptoms, in about three weeks.

INTERNAL MEDICINE

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"INFECTIOUS MONONUCLEOSIS." Diseases of the Blood. Second Edition. Roy R. Kracke. Infectious Mononucleosis. A. Bernstein. Med. 19:85. 1940.

The following is a summary of the subject of Infectious Mononucleosis taken largely from the above.

(Benign Lymphadenosis) (Glandular Fever) (Acute Benign Lymphoblastosis) (Acute Benign Leukemia) (Acute Lymphadenosis) (Monocytic Angina) (Lymphocytosis of Infection)

All of these names have been assigned to the disease from time to time and by different authors and are given you because collectively they convey the nature of the disease.

History

The disease seems to have been first recorded in 1885 by Filatow in Russia, who called it an idiopathic lymphadenopathy of children. An epidemic involving 96 children in Ohio was reported by West in 1896. Terflinger in 1908 reported an epidemic of 150 cases occurring in adults. Sprunt and Evans in 1920 introduced the name infectious mononucleosis, and following this many reports have been made. The last and perhaps the most important contribution to literature is a monograph by Bernstein.

Etiology

The disease has been reported from all parts of the world. Kracke believes it is probably non-existent in negroes. It is more prevalent in children and young adults, but old individuals have been known to be affected. Infants under the age of six months are considered to be immune. More cases of males than females have been reported. No seasonal or occupational incident of importance has been reported. The disease may be epidemic or sporatic. Epidemics seem to be more likely among children and sporatic cases the rule for adults. Incubation period varies from five to 15 days and it is assumed that the infection is transmitted by fairly close contact, although it is unusual for more than one child in a family to become infected.

Considerable investigation has been done in connection with the search for a specific etiological agent, both in the human and in animals, without success.

Symptoms

The onset is gradual, the patient has fatigue, dull headache, general malaise, sore throat, lymphadenopathy and after about six days becomes febrile. The cervical (posterior auricular usually not involved), axillary and inguinal glands usually become considerably enlarged and moderately tender and at the end of about the first ten day period the patient complains of moderate sore throat.

Symptoms as summarized by Isaacs and his associates are as follows: "Headache, general malaise, sore throat, tenderness of the glands, backache, chilliness, anorexis, coryza, sweating, weakness, cough, dizziness, sore bleeding gums, nausea, stiff neck, epistaxis, stomatitis, abdominal pain, rash, photophobia and conjunctivitis. The temperature ranges from 102° to 105°, enlargement of the glands is practically 100 percent and suppuration of glands has seldom been observed. The spleen is palpable in about 40 percent of the cases but never extremely large."

Like most acute infectious diseases, there is considerable variation in the severity and, likewise, the symptoms. As a rule no complications occur and the disease runs a course of 20 to 30 days.

Diagnosis

Although the disease presents a fairly characteristic clinical syndrome, certain laboratory procedures are of definitely specific value.

The macrolymphocytosis is an outstanding feature. The term macrolymphocytosis is preferable to the term mononucleosis, because the cells which predominate during the course of this disease are not always the classical large mononuclear cells. Regardless of this technicality, a persistent finding in these cases is that of a high percentage, 40 to 90, of lymphocytes which are larger than normal, and whether they are to be called large mononuclears or immature lymphocytes is only a technicality. The total number of myeloid cells or neutrophils is ordinarily decreased, which makes neutropenia a conspicuous finding from the very onset and of the neutrophils present, most are immature in form.

We may say then, in brief, that the blood picture is that of leucocytosis, neutropenia and macrolymphocytosis.

Anemia is against the rule and thrombocytes are ordinarily average or slightly decreased in number and normal in quality. Bleeding time may be slightly prolonged, but is ordinarily within normal limits and the clotting time is universally normal. There has been no consistant relation to any blood group. Blood chemistry is normal.

For some strange reason the serological tests for syphilis have been falsely positive in 18 percent (Bernstein). The Widal Agglutination Test has also been reported positive in an occasional case.

The Heterophile Antibody Test

Heterophile simply means that antibodies are present which cause a reaction such as agglutination or hemolysis with antigens other than those involved in their production. In this instance the antigen involved in the production of the disease of infectious mononucleosis is not known but the serum containing antibodies is found to agglutinate and occasionally hemolyze the red cells of the sheep, the goat and the ox. In other words, the reaction toward cells or antigens other than those which cause the disease, heter- meaning other and -phile meaning affinity. The heterophile antibody or Paul-Bunnell Test, therefore, amounts to a simple test in which the serum in different dilutions is added to sheep cells in suspension. Agglutination is easily observed.

Normal blood may contain sheep cell agglutins up to a titer of 1:80. In infectious mononucleosis the dilution ranges much higher, from 1:160 to as high as 1:40,000, and in one case 1:160,000 was reported. The test becomes positive four or five days after the onset of the disease and remains positive in relatively high dilutions for six to 12 months. Serum which has been kept in the ice box for as long as three years has been found to give a strong positive reaction. The age of the sheep cells, the concentration of the sheep cells and the length of incubation may be factors in connection with the titer of the serum, but the test is invariably strongly positive and a matter of dilution has no clinical significance. Ordinarily two hours incubation is allowed. Bunnell ran tests for heterophile antibodies in over 2,000 patients representing 76 clinical entities and none showed a titer higher than 1:32, while the cases of infectious mononucleosis ranged from 1:62 to 1:4096. Therefore, the presence of a definitely positive heterophile antibody test is practically absolute assurance that the patient is suffering from infectious mononucleosis. Cases of serum sickness may likewise give a positive in high dilutions.

The biopsies of lymph nodes have shown diffuse hyperplasia with no absolutely characteristic histopathological

pattern. The abnormal lymphocytes that appear in the blood stream may be recognized in large numbers in the lymph nodes.

No valuable information has been obtained from autopsies. This is as might be expected because death has rarely occurred.

Differential Diagnosis

Leukemia, agranulocytosis, Vincent's angina, diphtheria, tonsillitis, syphilis, Hodgkin's disease, tuberculosis and occasionally some other similar type disease may at the onset present a similar picture.

Acute lymphatic leukemia offers the greatest difficulty in differentiation in so far as the laboratory findings are concerned. Leukemoid states simulating leukemia or simulating infectious mononucleosis may occur. However, neither true lymphatic leukemia nor leukemoid states give a positive heterophile antibody test.

Treatment

There is no specific treatment. Isolation and symptomatic therapy are adequate. Serums, sulfanols, x-ray and other agents have been used without satisfactory results. Bed rest during the febrile period and modified ambulatory activities for a week to ten days following cessation of fever is recommended.

UROLOGY

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"INFLUENCE OF TEMPERATURE ON SULFATHIAZOLE THERAPY OF GONOCOCCAL INFECTIONS." Frederick B. Bang. Nashville, Tenn. Journal of Urology, March, 1942.

The use of the chick embryo as an experimental host for gonococci allows an in vivo study of chemotherapy at different temperatures. It is noteworthy that not only is therapy more effective at temperatures above 37° C., but it is less effective below.

A small series of hospitalized male patients with acute gonorrheal urethritis was treated for five days with the usual dose of sulfathiazole combined with moderate hyperpyrexia. The results of such treatment were favorable and the authors thought that the addition of hyperpyrexia was an enhancing addition to the successful treatment of gonorrhea.

"DISTURBANCES OF THE ACID-BASE BALANCE OF THE BLOOD; THEIR SIGNIFICANCE AND INFLUENCE ON PROGNOSIS IN ELDERLY PATIENTS." H. S. Rupert, Greely, Colo. Journal of Urology, Mar. 1942.

The kidneys' ability to maintain the acid-base balance of the blood is an important element of renal function and is not given the attention it deserves. Neglect of this function probably accounts for a few instances of mortality where surgery is performed. The author suggests that the CO2 combining power of the blood be determined and if it be low, steps are to be taken to counteract this. They suggest the intravenous administration of sodium lactate, 1/6 molar solution or blood transfusion as the best procedure to control acidosis.

"PROSTATIC OBSTRUCTION IN YOUNG ADULTS." REPORT OF FIVE CASES. H. A. Fowler, Washington, D. C. Journal of Urology, Jan. 1942.

The authors report five instances of true prostatic hypertrophy occurring in young individuals, the youngest 19 years and the oldest 26 years. They discuss the etiology of prostatic hypertrophy in the light of its occurrence in young individuals. They feel that to account for such cases one must assume some factor or factors other than changes incident to the male climacteric as the cause of hormonal imbalance; one that may become operative at any age, possibly of congenital origin.

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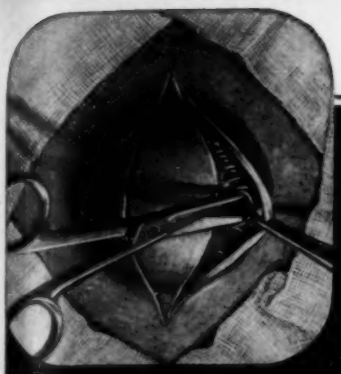

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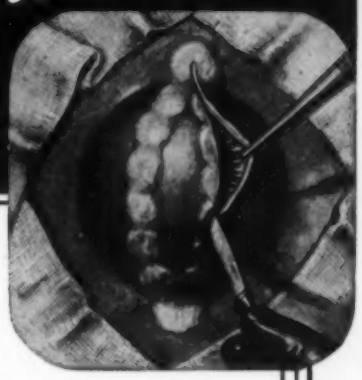

LOCAL anesthesia with Novocain has been induced for countless numbers of major and minor operations. Novocain has stood the test of time, having clearly demonstrated its efficiency and relatively high safety.

The strength of solutions required for various types of injections has been standardized by extensive experience as follows: for infiltration, 0.5 per cent solution; for blocking nerve trunks 1 per cent solution; for spinal anesthesia a total dose of from 50 mg. to 200 mg. (or the equivalent 10 per cent solution, further diluted with spinal fluid).

Novocain is available, with and without Suprarenin*, in various sized ampules containing several concentrations and in tablets of different formulas. Few preparations are supplied in such a large variety of convenient, ready-to-use forms.

*Suprarenin (trademark), brand of synthetic epinephrine.

Write for copy of "Novocain—Its Use as a Local Anesthetic for General Surgery" which describes numerous procedures of local anesthesia, profusely illustrated with drawings made in the clinic by a physician artist.

WINTHROP

ACCEPTED AMERICAN MEDICAL ASSN.

NOVOCAIN

Reg. U. S. Pat. Off. & Canada

Brand of PROCAINE HYDROCHLORIDE

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Winthrop Chemical Company, Inc.

Pharmaceuticals of merit for the physician

NEW YORK, N. Y. WINDSOR, ONT.

OFFICERS OF COUNTY SOCIETIES, 1942

★

COUNTY	PRESIDENT	SECRETARY	MEETING TIME
Alfalfa	Jack F. Parsons, Cherokee	L. T. Lancaster, Cherokee	Last Tues. Each 2nd Mo.
Atoka-Coal	J. B. Clark, Coalgate	J. S. Fulton, Atoka	
Beckham	H. K. Speed, Sayre	E. S. Kilpatrick, Elk City	Second Tues. eve.
Blaine	Virginia Olson Curtin, Watonga	W. F. Griffin, Watonga	
Bryan	A. J. Wells, Calera	W. K. Haynie, Durant	Second Tues. eve.
Caddo	Fred L. Patterson, Carnegie	C. B. Sullivan, Carnegie	
Canadian	P. F. Herod, El Reno	A. L. Johnson, El Reno	Subject to call
Carter	Walter Hardy, Ardmore	H. A. Higgins, Ardmore	
Cherokee	Park H. Medearis, Tahlequah	Isadore Dyer, Tahlequah	
Choctaw	C. H. Hale, Boswell	Fred D. Switzer, Hugo	
Cleveland	F. C. Buffington, Norman	Phil Haddock, Norman	Thursday nights
Comanche	George S. Barber, Lawton	W. F. Lewis, Lawton	
Cotton	George W. Baker, Walters	Mollie F. Scism, Walters	Third Friday
Craig	W. R. Marks, Vinita	J. M. McMillan, Vinita	
Creek	Frank Sisler, Bristow	O. H. Cowart, Bristow	
Custer	Richard M. Burke, Clinton	W. C. Tisdal, Clinton	Third Thursday
Garfield	D. S. Harris, Drummond	John R. Walker, Enid	Fourth Thursday
Garvin	T. F. Gross, Lindsay	John R. Callaway, Pauls Valley	Wed before 3rd Thurs.
Grady	D. S. Downey, Chickasha	Frank T. Joyce, Chickasha	3rd Thursday
Grant	I. V. Hardy, Medford	E. E. Lawson, Medford	
Greer	G. F. Border, Mangum	J. B. Hollis, Mangum	
Harmon	S. W. Hopkins, Hollis	W. M. Yeargan, Hollis	First Wednesday
Haskell	William Carson, Keota	N. K. Williams, McCurtain	
Hughes	Wm. L. Taylor, Holdenville	Imogene Mayfield, Holdenville	First Friday
Jackson	J. M. Allgood, Altus	Willard D. Holt, Altus	Last Monday
Jefferson	W. M. Browning, Waurika	J. I. Hollingsworth, Waurika	Second Monday
Kay	J. C. Wagner, Ponca City	J. Holland Howe, Ponca City	Third Thurs.
Kingfisher	C. M. Hodgson, Kingfisher	John R. Taylor, Kingfisher	
Kiowa	J. M. Bonham, Hobart	B. H. Watkins, Hobart	
LeFlore	G. R. Booth, LeFlore	Rush L. Wright, Poteau	
Lincoln	E. F. Hurlbut, Meeker	C. W. Robertson, Chandler	First Wednesday
Logan	William C. Miller, Guthrie	J. L. LeHew, Jr., Guthrie	Last Tuesday evening
Marshall	J. L. Holland, Madill	O. A. Cook, Madill	
Mayes	L. C. White, Adair	V. D. Herrington, Pryor	
McClain	B. W. Slover, Blanchard	R. L. Royster, Purcell	
McCurtain	R. D. Williams, Idabel	R. H. Sherrill, Broken Bow	Fourth Tues. eve.
McIntosh	F. R. First, Checotah	William A. Tolleson, Eufaula	Second Tuesday
Murray	P. V. Annadown, Sulphur	F. E. Sadler, Sulphur	
Muskogee	Shade D. Neely, Muskogee	J. T. McInnis, Muskogee	First & Third Mon.
Noble	J. W. Francis, Perry	C. H. Cooke, Perry	
Okfuskee	J. M. Pemberton, Okemah	L. J. Spickard, Okemah	Second Monday
Oklahoma	R. Q. Goodwin, Okla. City	Wm. E. Eastland, Okla. City	Fourth Tuesday
Okmulgee	J. G. Edwards, Okmulgee	John R. Cotteral, Henryetta	Second Monday
Osage	C. R. Weirich, Pawhuska	George K. Hemphill, Pawhuska	Second Monday
Ottawa	J. B. Hampton, Commerce	Walter Sanger, Picher	Third Thursday
Pawnee	E. T. Robinson, Cleveland	Robert L. Browning, Pawnee	
Payne	John W. Martin, Cushing	James D. Martin, Cushing	Third Thursday
Pittsburg	Austin R. Stough, McAlester	Edw. D. Greenberger, McAlester	Third Friday
Pontotoc	R. E. Cowling, Ada	E. R. Muntz, Ada	First Wednesday
Pottawatomie	John Carson, Shawnee	Clinton Gallaher, Shawnee	First & Third Sat.
Pushmataha	P. B. Rice, Antlers	John S. Lawson, Clayton	
Rogers	W. A. Howard, Chelsea	George D. Waller, Claremore	First Monday
Seminole	H. M. Reeder, Konawa	Mack I. Shanholtz ,Wewoka	
Stephens	A. J. Weedn, Duncan	W. K. Walker, Marlow	
Texas	L. G. Blackmer, Hooker	Johnny A. Blue, Guymon	
Tillman	C. C. Allen, Frederick	O. G. Bacon, Frederick	
Tulsa	H. B. Stewart, Tulsa	E. O. Johnson, Tulsa	Second & Fourth Mon. eve.
Wagoner	J. H. Plunkett. Wagoner	H. K. Riddle, Coweta	
Washington-Nowata	R. W. Rucker, Bartlesville	J. V. Athey, Bartlesville	Second Wednesday
Washita	A. S. Neal, Cordell	James F. McMurry, Sentinel	
Woods	W. F. LaFon, Waynoka	O. E. Templin, Alva	Last Wednesday
Woodward	M. H. Newman, Shattuck	C. W. Tedrowe, Woodward	